Measuring progress from 1990 to 2017 and projecting attainment to 2030 of the health-related Sustainable Development Goals for 195 countries and territories: a systematic analysis for the Global Burden of Disease Study 2017

Summary

Background Efforts to establish the 2015 baseline and monitor early implementation of the UN Sustainable Development Goals (SDGs) highlight both great potential for and threats to improving health by 2030. To fully deliver on the SDG aim of “leaving no one behind”, it is increasingly important to examine the health-related SDGs beyond national-level estimates. As part of the Global Burden of Diseases, Injuries, and Risk Factors Study 2017 (GBD 2017), we measured progress on 41 of 52 health-related SDG indicators and estimated the health-related SDG index for 195 countries and territories for the period 1990–2017, projected indicators to 2030, and analysed global attainment.

Methods We measured progress on 41 health-related SDG indicators from 1990 to 2017, an increase of four indicators since GBD 2016 (new indicators were health worker density, sexual violence by non-intimate partners, population census status, and prevalence of physical and sexual violence [reported separately]). We also improved the measurement of several previously reported indicators. We constructed national-level estimates and, for a subset of health-related SDGs, examined indicator-level differences by sex and Socio-demographic Index (SDI) quintile. We also did subnational assessments of performance for selected countries. To construct the health-related SDG index, we transformed the value for each indicator on a scale of 0–100, with 0 as the 2.5th percentile and 100 as the 97.5th percentile of 1000 draws calculated from 1990 to 2030, and took the geometric mean of the scaled indicators by target. To generate projections through 2030, we used a forecasting framework that drew estimates from the broader GBD study and used weighted averages of indicator-specific and country-specific annualised rates of change from 1990 to 2017 to inform future estimates. We assessed attainment of indicators with defined targets in two ways: first, using mean values projected for 2030, and then using the probability of attainment in 2030 calculated from 1000 draws. We also did a global attainment analysis of the feasibility of attaining SDG targets on the basis of past trends. Using 2015 global averages of indicators with defined SDG targets, we calculated the global annualised rates of change required from 2015 to 2030 to meet these targets, and then identified in what percentiles the required global annualised rates of change fell in the distribution of country-level rates of change from 1990 to 2015. We took the mean of these global percentile values across indicators and applied the past rate of change at this mean global percentile to all health-related SDG indicators, irrespective of target definition, to estimate the equivalent 2030 global average value and percentage change from 2015 to 2030 for each indicator.

Findings The global median health-related SDG index in 2017 was 59.4 (IQR 35·4–67·3), ranging from a low of 11·6 (95% uncertainty interval 9·6–14·0) to a high of 84·9 (83·1–86·7). SDG index values in countries assessed at the subnational level varied substantially, particularly in China and India, although scores in Japan and the UK were more homogeneous. Indicators also varied by SDI quintile and sex, with males having worse outcomes than females for non-communicable disease (NCD) mortality, alcohol use, and smoking, among others. Most countries were projected to have a higher health-related SDG index in 2030 than in 2017, while country-level probabilities of attainment by 2030 varied widely by indicator. Under-5 mortality, neonatal mortality, maternal mortality ratio, and malaria indicators had the most countries with at least 95% probability of target attainment. Other indicators, including NCD mortality and suicide mortality, had no countries projected to meet corresponding SDG targets on the basis of projected mean values for 2030 but showed some probability of attainment by 2030. For some indicators, including child malnutrition, several infectious diseases, and most violence measures, the annualised rates of change required to meet SDG targets far exceeded the pace of progress achieved by any country in the recent past. We found that applying the mean global annualised rate of change to indicators without defined targets would equate to about 19% and 22% reductions in global smoking and alcohol consumption, respectively; a 47% decline in adolescent birth rates; and a more than 85% increase in health worker density per 1000 population by 2030.
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