Supplementary Methods

Besides data derived from population-based cancer registries like GLOBOCAN, the up-to-date data of incidence and mortality of colorectal cancer (CRC) from the Global Burden of Disease (GBD) 2019 Data Resources also provided important references to estimate the disease burden. The GBD 2019 examined the trend in CRC based on estimation and modeling, which are publicly available and adhere to the Guidelines on Accurate and Transparent Health Estimate Reporting. To guarantee a satisfying certification, GBD assigned star ratings to rate the quality of data for any given location year. Two dimensions determined this star rating: (I) the percentage of total deaths determined to be major garbage; and (II) the level of completeness of death registration. These two values were used to create a "percent well-certified" value between 0 and 1, determined as $pct_{well\ certified} = Completeness \times (1 - pct_{major\ garbage})$. Noteworthily, the data quality of verbal autopsy resources was adjusted due to the imprecision of the redistribution for verbal autopsy. Previous studies have also demonstrated the validity of such methods to reflect the true underlying disease burden.[1–3]

The smoking indicator was defined as the percentage of the population aged 15 years and over who currently use any smoked tobacco product. Alcohol indicator was defined as the total amount of alcohol consumed per person over a calendar year, in liters of pure alcohol. UHC indicator was defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population. High cholesterol indicator was defined as a percentage of defined population with total cholesterol ≥240 mg/dL (6.2 mmol/L). Physical inactivity indicator was defined as a percent of defined population attaining <150 min of moderate-intensity physical activity per week, or <75 min of vigorous-intensity physical activity per week, or equivalent. GDP indicator was defined as annual percentage growth rate of GDP at market prices based on constant local currency. Out-of-pocket indicator was defined as share of spending on health directly out-of-pocket by households of total current

health expenditures. Unemployment indicator was defined as share of labor force that is without work but available for and seeking employment. Health expenditure indicator was defined as the level of capital investments on health expressed as a percentage of GDP. Health system indicator was defined as the number of physicians per 1000 people. Education indicator was defined as total enrollment in primary school regardless of age.

References

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