

S1 Table. Summary of characteristics of health disparity measures

Disparity measure	Calculation	Value if no disparity	Reference rate	Incorporating rates of all groups	Population-weighted
Absolute measures					
RD	Absolute difference between the highest incidence rate (IR_1) and the lowest incidence rate (IR_2), i.e. $RD = IR_1 - IR_2$	0	Lowest	No	No
BGV	Sum of all squared deviations from a population average of all racial/ethnic groups which are weighted by population size. $BGV = \sum_{j=1}^J p_j (IR_j - \mu)^2$ <p>where IR_j and p_j indicate the incidence rate and the population size of the jth group, respectively, μ is the average rate in the total population, and J is the number of groups.</p>	0	Average	Yes	Yes
Relative measures					
RR	The highest divided by the lowest incidence rate, i.e. $RR = IR_1/IR_2$.	1	Lowest	No	No
IDisp	Sum of the average difference between the rates in all groups and a reference rate, which is calculated as: $IDisp = \left(\sum_{j=1}^{J-1} IR_j - IR_{ref} / J - 1 \right) / IR_{ref} \times 100$	0	Lowest	Yes	No

where IR_j indicates the incidence rate in the j th group, IR_{ref} is the rate in the reference population, which is the lowest rate in this study, and J is the number of racial/ethnic groups.

MLD	Summarizing the disproportionality of the percentages of the total number of cancer cases from all groups as compared with the percentages of population size in the total population.	0	Average	Yes	Yes
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$$MLD = \sum_{j=1}^J p_j (-\ln r_j)$$

where p_j and r_j indicate the proportion of the total population and the ratio of the incidence rate relative to the population average rate in the j th group, respectively.

T		0	Average	Yes	Yes
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$$T = \sum_{j=1}^J p_j r_j \ln r_j$$

where p_j and r_j indicate the proportion of the total population and the ratio of the incidence rate relative to the population average rate in the j th group, respectively.

BGV, between group variance; IDisp, index of disparity; MLD, mean log deviation; RD, range difference; RR, range ratio; T, Theil index.