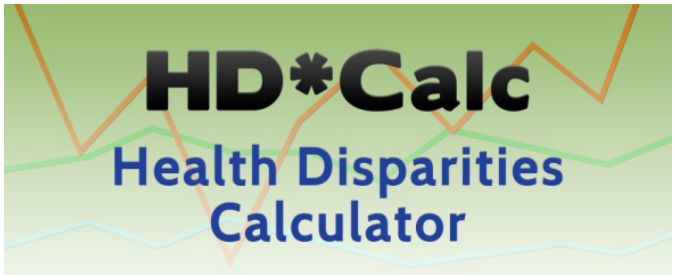
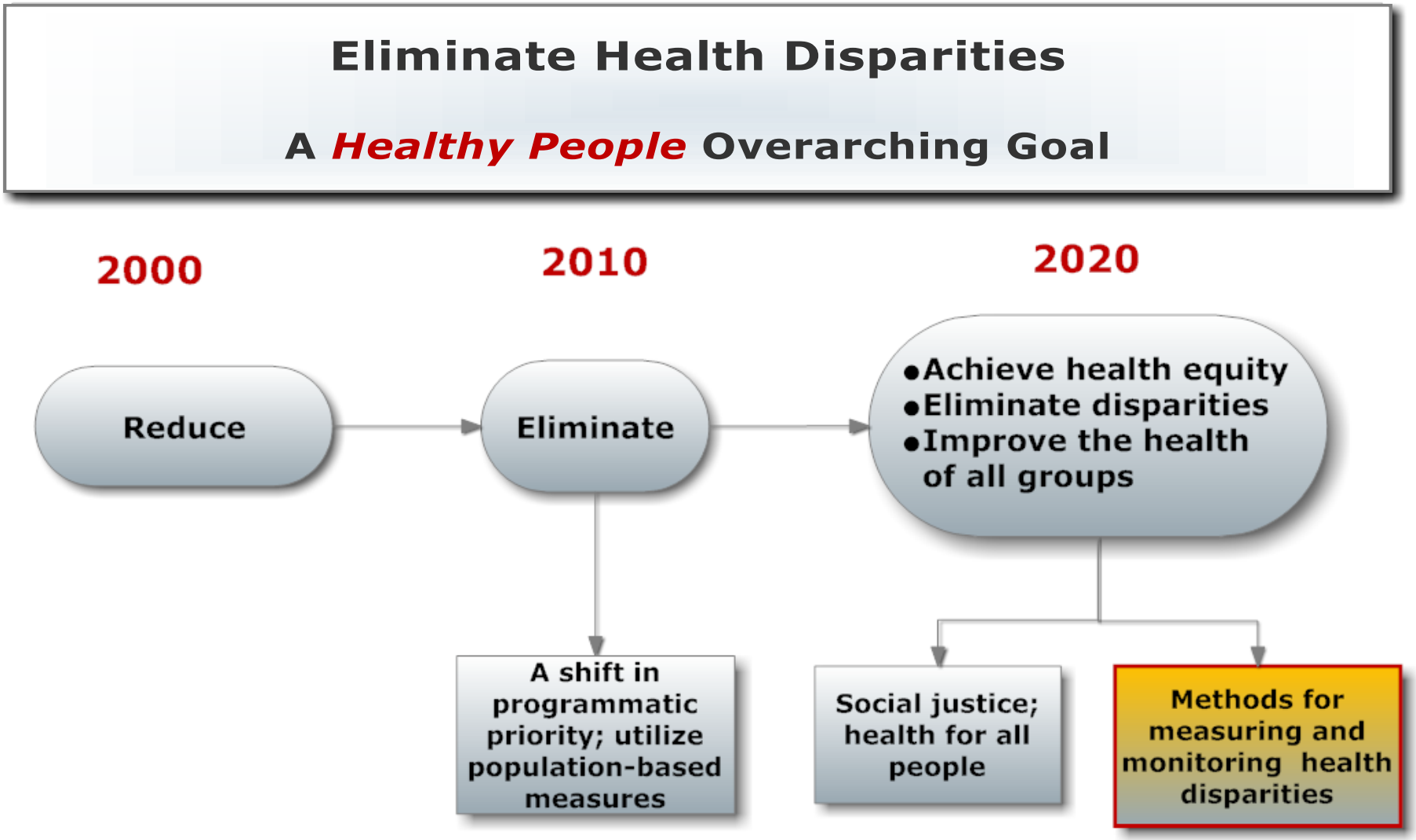
Health Disparities Calculator (HD*Calc): A Tool to Evaluate and Monitor Health Disparities



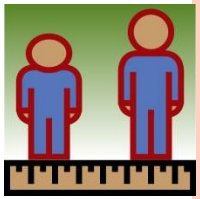
CRCHD Professional Development Workshop
June 8, 2015

Antoinette Percy-Laurry, DrPH, MSPH
National Cancer Institute

NATIONAL GOAL TO ELIMINATE HEALTH DISPARITIES

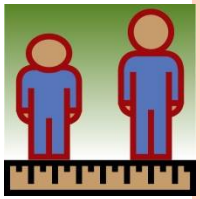


What is HD*Calc?



- Statistical software freely available at: http://seer.cancer.gov/hdcalc/
- Extends work published in 2005 & 2007 NCI monographs
- Generates multiple measures of disparity after importing data into the calculator software
- Accepts imported data (cross-sectional and trend data categorized by disparity groups)
  - Statistics may be calculated by NCI's SEER*Stat software or any software (HD*Calc will import text or csv files)

HD*Calc
Health Disparities Calculator



What Can HD*Calc Do?

- Compare different measures of disparities by race/ethnicity, SES and geographic area quickly and accurately
- Graphically presents trends in data
- Easily export tables and graphs

HD*Calc
Health Disparities Calculator

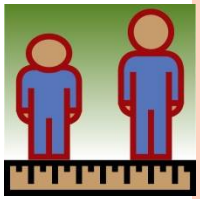
HD*Calc Health Disparity measures

Summary Table of Advantages and Disadvantages of HD*Calc Health Disparity Measures

Disparity Measure	Symbol	Absolute or Relative	Reference Group	All Social Groups	Reflect SES Gradient	Social Group Weighting	Inequality Aversion Parameter	Graphical Analogue
Social Group Disparity								
Absolute Difference	*AD*	**Absolute**	Best	No	Yes	No	No	Yes
Relative Difference	*RD*	Relative	Best	No	Yes	No	No	Yes
Slope Index of Inequality	*SII*	**Absolute**	Average	Yes	Yes	Yes	No	Yes
Relative Index of Inequality	*RII*	Relative	Average	Yes	Yes	Yes	No	Yes
Index of Disparity	ID_{isp}	Relative	Best	Yes	No	No	No	No
Relative Concentration Index	*RCI*	Relative	Average	Yes	Yes	Yes	Yes	Yes
Absolute Concentration Index	*ACI*	**Absolute**	Average	Yes	Yes	Yes	Yes	Yes
Between Group Variance	*BGV*	**Absolute**	Average	Yes	No	Yes	Yes	No
Theil Index	*T*	Relative	Average	Yes	No	Yes	Yes	No
Mean Log Deviation	*MLD*	Relative	Average	Yes	No	Yes	Yes	No
Kunst-Mackenbach	RII_{KM}	Relative	Best	Yes	Yes	Yes	Yes	Yes

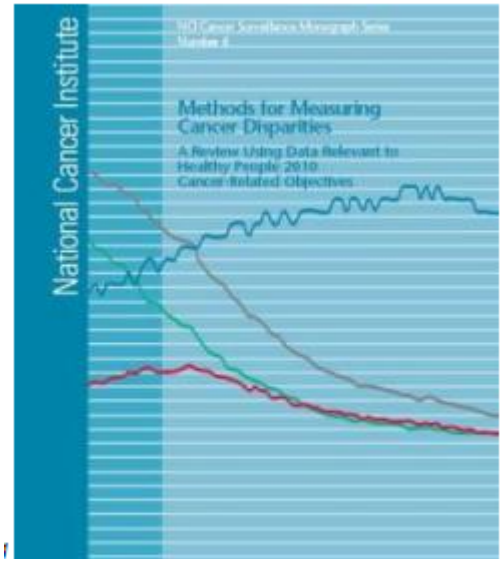
[a]All those better off.
[b]In the case of regression-with grouped data.

Tutorials and Monographs



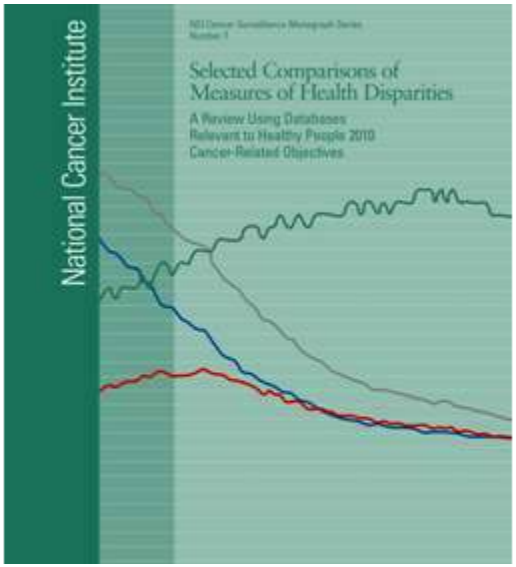
URL: http://www.seer.cancer.gov/hdcalc/index.html

2005



Methods for Measuring Cancer Disparities: A Review Using Data Relevant to Healthy People 2010 Cancer-Related Objectives

2007

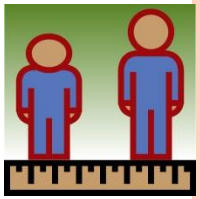


Selected Comparisons of Measures of Health Disparities: A Review Using Databases Relevant to Healthy People 2010 Cancer-Related Objectives

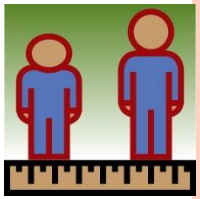
HD*CALC AS AN EXTENSION OF SEER*STAT

- Surveillance, Epidemiology, and End Results (SEER) Program
  - U.S. population–based cancer registries
    - Diverse racial/ethnic and socioeconomic populations
    - SEER 18; 28% percent of the US
  - Managed by the National Cancer Institute
  - Established in response to National Cancer Act of 1971
  - Began collecting data on cancer cases January 1, 1973
- SEER*Stat is a software tool to access SEER research data
- SEER data can be imported into HD*Calc
- HD*Calc output is compatible with Joinpoint

Summary



- HD*Calc can be used as an extension of SEER*stat or a stand alone
- HD*Calc can enable researchers to more fully explore their own data and to understand the implications of different measures
- Choice of disparity measures will have an important impact on conclusions
  - Scale of measurement
  - How much to weight the data
  - Reference level
- Monitoring health inequalities requires both precise measurement and value judgments
  - A suite of health inequality measures is necessary to provide a complete description of the magnitude of inequality

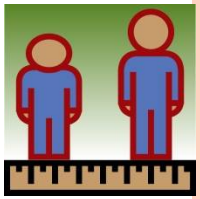


HD*Calc Demonstration

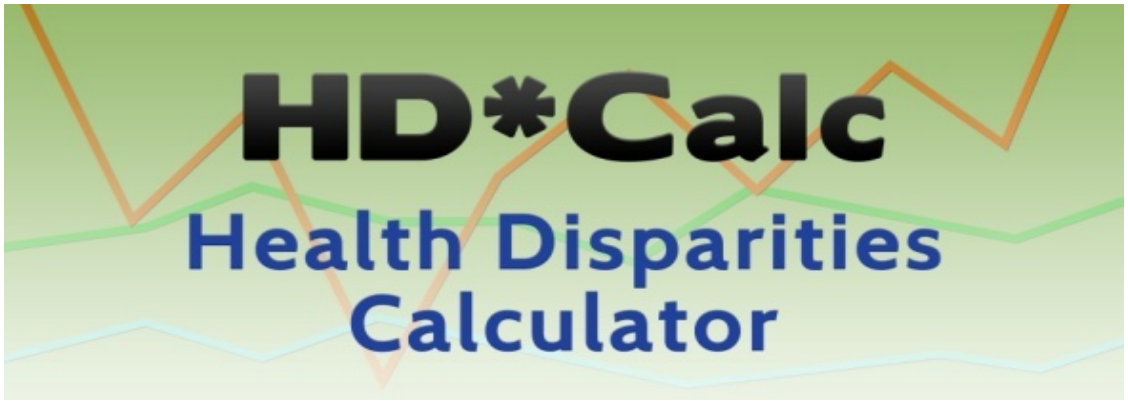
- Training webinar
  - Live Demonstration of HD*Calc
  - PPT Presentations
  - Recordings and Transcripts
- Technical assistance: hdcalculator@imsweb.com
- Recent Publication
  - American Journal of Public Health
    - Statistically Speaking:

      Breen et al., 2014, Health Disparities Calculator: A Methodologically Rigorous Tool for Analyzing Inequalities in Population Health

Acknowledgements



- National Cancer Institute (NCI)
  - Division of Cancer Control and Population Sciences (DCCPS)
  - Center for Reducing Cancer Health Disparities (CRCHD)
- National Institute of Minority Health and Health Disparities (NIMH)
- Collaborators
  - Information Management Services (IMS)
  - John Lynch, University of South Australia
  - Sam Harper, McGill University



Thank you