

Summary Measures of Disparity for Domains with Ordered Categories

Elsie Pamuk
National Center for Health Statistics
Centers for Disease Control and Prevention



Measurement of disparity allows comparisons:

- Across health indicators
- Between or across populations
- Over time

Focus of attention?

- Individual groups
 - Comparing single groups to a reference point
- A domain
 - Summarizing disparity across all groups constituting a conceptual domain

Definition of “domain”

A **domain** consists of the entire set of population groups that are based on one or more characteristics of persons in a population

Why focus on the domain, rather than the groups?

- The groups are not inherently meaningful
- The groups are inherently meaningful, but so is the defining aspect of the domain

Distinction between ordered and unordered domains –

for inherently ordered domains, the primary focus is usually on the domain itself, rather than the component groups.

Domains with ordered categories

- Socioeconomic status (SES)
 - Income
 - Education
 - Wealth
 - Occupational status
- Other
 - Urbanization

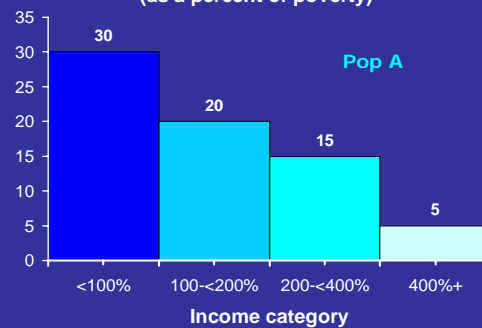
Whenever the focus is on the domain, it is appropriate to combine information from the component groups and create a summary measure of disparity.

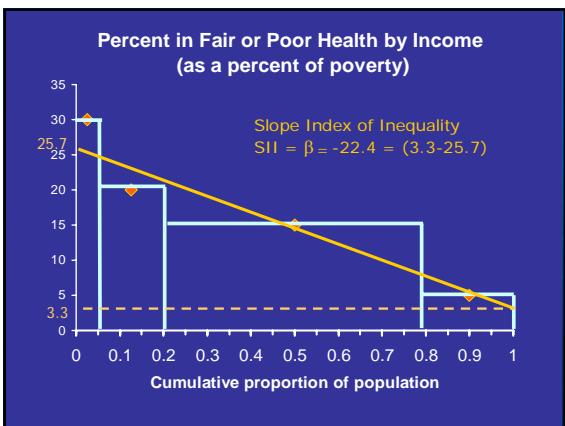
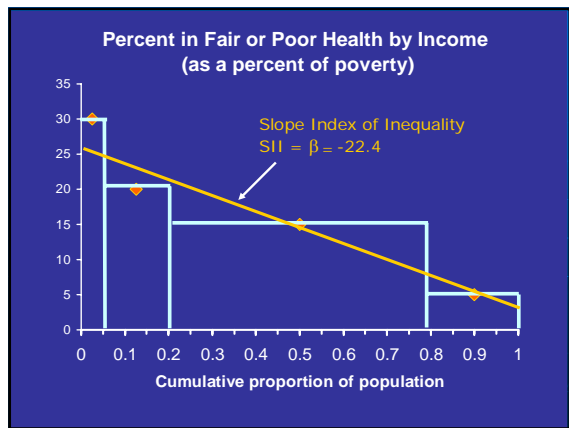
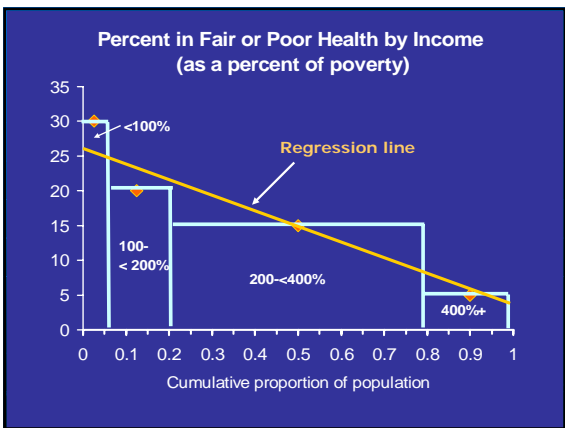
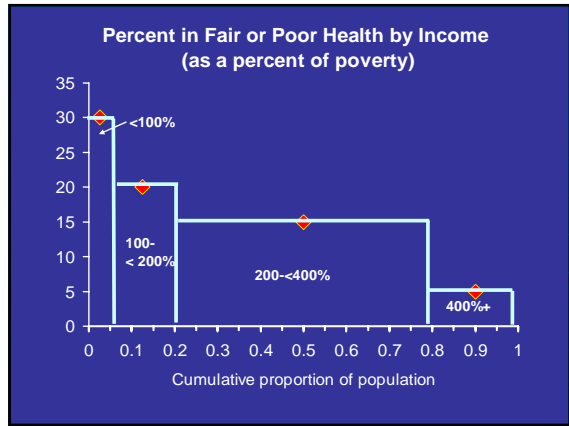
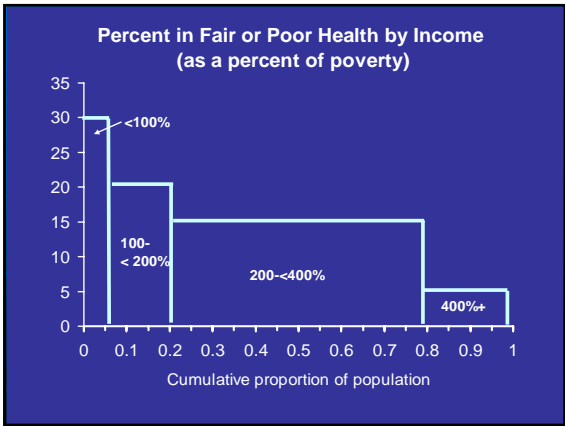
Common characteristics of summary measures of health disparities related to SES

- Use information from **all** of the component groups
- Preserve the inherent **ordering** of the groups
- Incorporate the **size** of the groups

Regression-based measures

Percent in Fair or Poor Health by Income (as a percent of poverty)





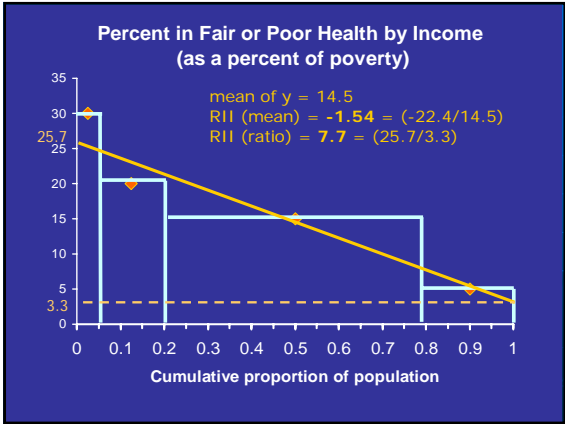
Regression based measures of disparity

$SII = \beta$

RII (mean) = $SII / \text{mean of } y$
 mean of y = population value of health indicator

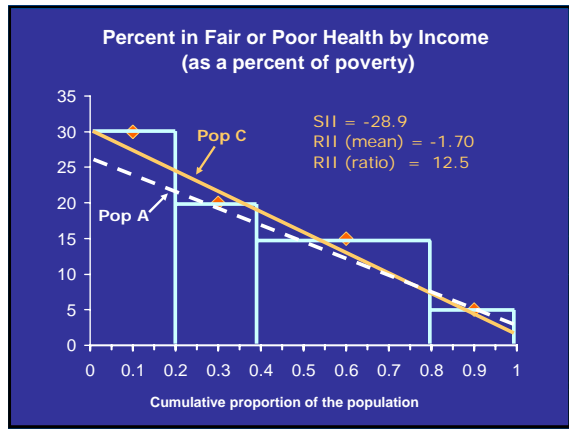
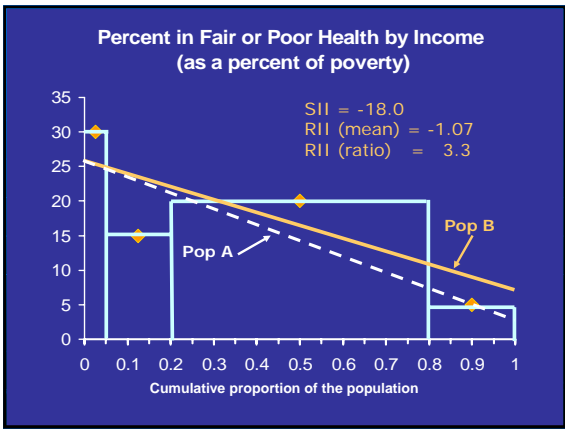
or

RII (ratio) = y at $x=1$ / y at $x=0$

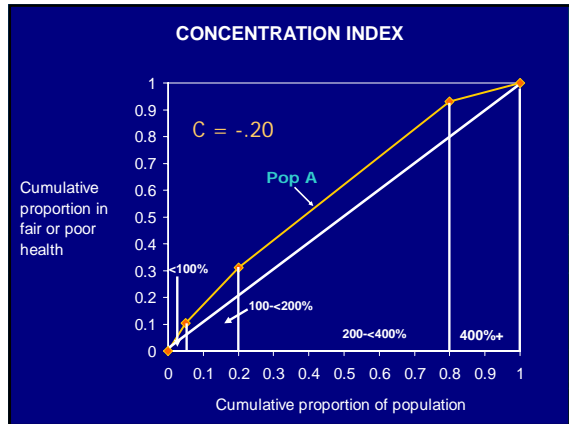


Example Populations

Income	Pop A		Pop B		Pop C	
	% of pop	% in fair or poor health	% of pop	% in fair or poor health	% of pop	% in fair or poor health
<100%	5	30	5	30	20	30
100- <200%	15	20	15	15	20	20
200- <400%	60	15	60	20	40	15
400%+	20	5	20	5	20	5



Concentration Indices



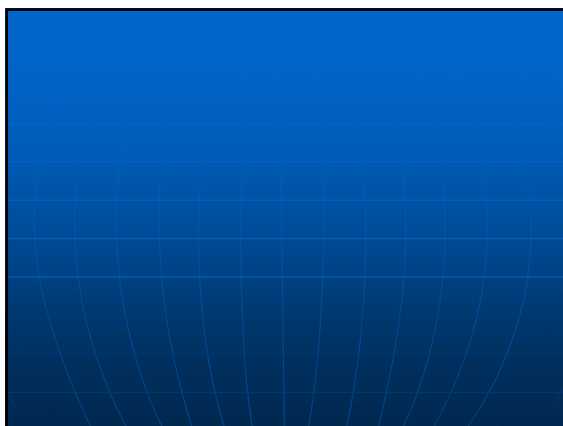
Income	White		Black	
	% of population	% with asthma episode	% of population	% with asthma episode
<100%	.10	7.1	.35	9.1
100- <200%	.18	5.3	.26	7.5
200- <400%	.36	5.2	.27	6.5
400%+	.36	4.9	.13	7.2
Lowest - Highest =		2.2		1.9
Lowest / Highest =		1.45		1.26

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200- <400%	.36	5.2	.27	6.5
400%+	.36	4.9	.13	7.2
SII		-1.7		-3.2
RII (mean)		-.32		-.60
RII (ratio)		1.4		1.9
C		-.05		-.09

Percent of children with no health care visit in the past year, NHIS 1990 and 2003

Income	1990		2003	
	% of population	% with no MD visit	% of population	% with no MD visit
<100%	.17	23.2	.16	12.2
100- <200%	.26	22.0	.22	13.0
200%+	.57	14.9	.62	8.1
Lowest / Highest		1.56		1.51
SII		-14.46		-8.9
RII (mean)		-.80		-.91
RII (ratio)		2.3		2.7
C		-.105		-.110

- ### Making decisions on how to measure disparity
- Who is the **audience**?
 - What is the **purpose and scope** of the exercise?



- ### Argument for weighting summary measures of disparity for SES domains:
- The essentially arbitrary nature of the categories
 - Categories differ by amount, rather than type
 - Distributions can be influenced by policy

