

Measurement Problems in the National Healthcare Disparities Report

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National Healthcare Disparities Report (NHDR) of Agency for Healthcare Research and Quality (AHRQ)

- Yearly reports mandated by congress
- 4 reports issued (2003-2006); 2007 forthcoming
- 2005 and 2006 measure changes over time
- 2006
 - 24 process quality core measures (e.g., prenatal care in first trimester)
 - 18 clinical outcome quality core measure (e.g., colorectal cancer)
 - 6 access core measures (e.g., insurance coverage)
 - For virtually all core measures the sizes of disparities are evaluated in terms of relative difference in rates of adverse outcome (e.g., failure to receive prenatal care in first trimester, cancer rates)

Key Measurement Problem in NHCDR

- NHDR fails to recognize that all measures of differences between two groups' rates of experiencing or avoiding some outcome tend to change in certain ways solely as a result of changes in the prevalence of the outcome.
- Without recognizing and attempting to account for these tendencies it is impossible to draw meaningful conclusions about changes in health or healthcare disparities over time.
- According to the approach in the NHDR, as healthcare improves, and favorable outcomes become more common (adverse outcomes become less common), healthcare disparities will be perceived to be increasing.

Patterns of change in measures between rate as an outcome goes from being very rare to being almost universal:

- Relative differences in experiencing the outcome tend to decrease
- Relative differences in failing to experience the outcome tend to increase
- Absolute differences initially increase then decline
- Odds ratios initially decline then increase

References

- jpscanlan.com – Measuring Health Disparities Tab (especially Section D)
- “Can We Actually Measure Health Disparities?” *Chance* 2006
- “Measuring Health Disparities,” *J Public Health Management and Practice* 2006
- “The Misinterpretation of Health Inequalities in the United Kingdom,” British Society for Population Studies Conference 2006
- “Race and Mortality,” *Society* 2000

Specifications for Figures 1- 4

- Two normal distributions of factors associate with risks of experiencing or avoiding some outcome (e.g., scores on a paper and pencil test)
- Mean of advantaged group (AG) is one half a standard deviation higher than mean of disadvantaged group (DG)
- Distributions have same standard deviation

Fig 1: Ratio of (1) AG Success Rate to DG Success Rate at Various Cutoffs Defined by AG Success Rate

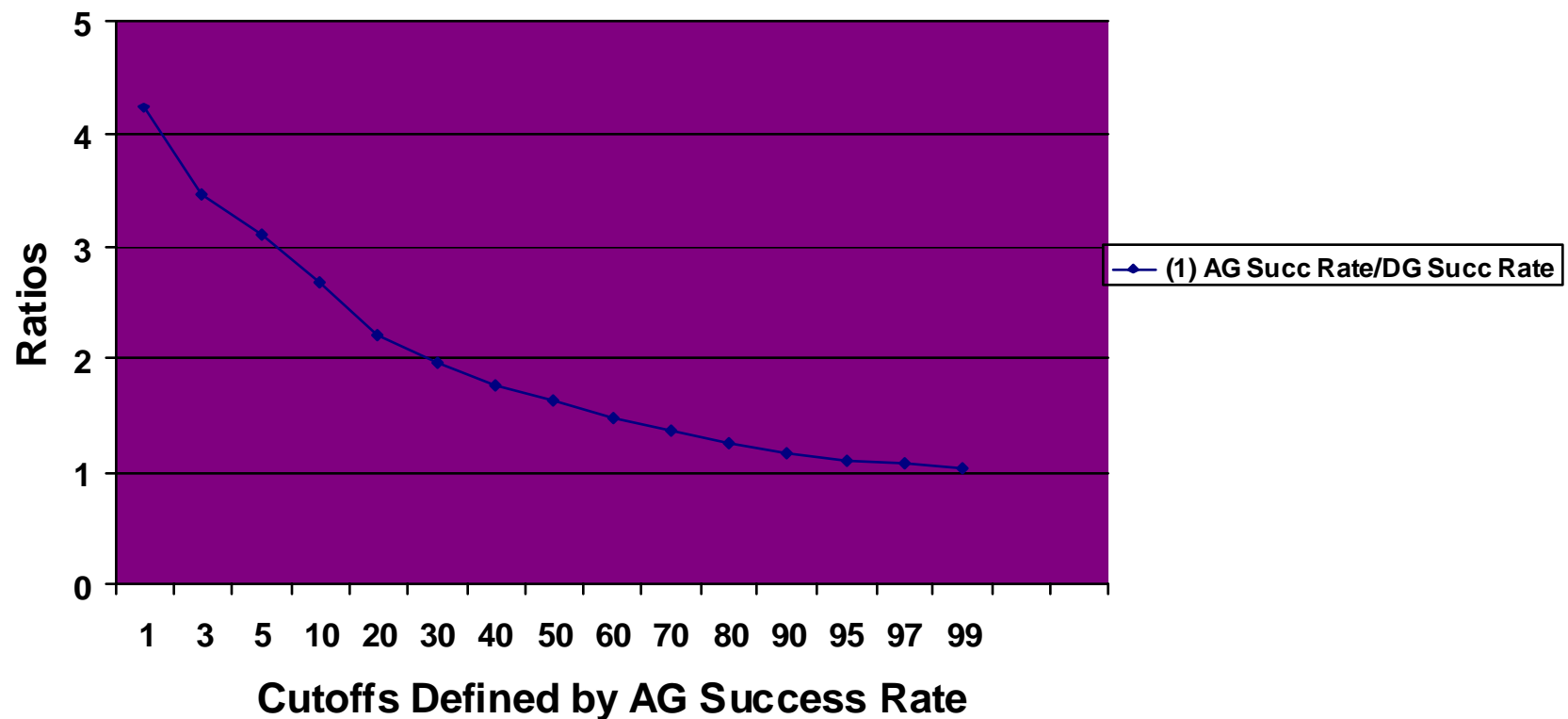


Fig 2: Ratios of (1) AG Success Rate to DG Success Rate and (2) DG Fail Rate to AG Fail Rate and (2) AG Pass Rate to DG Pass Rate

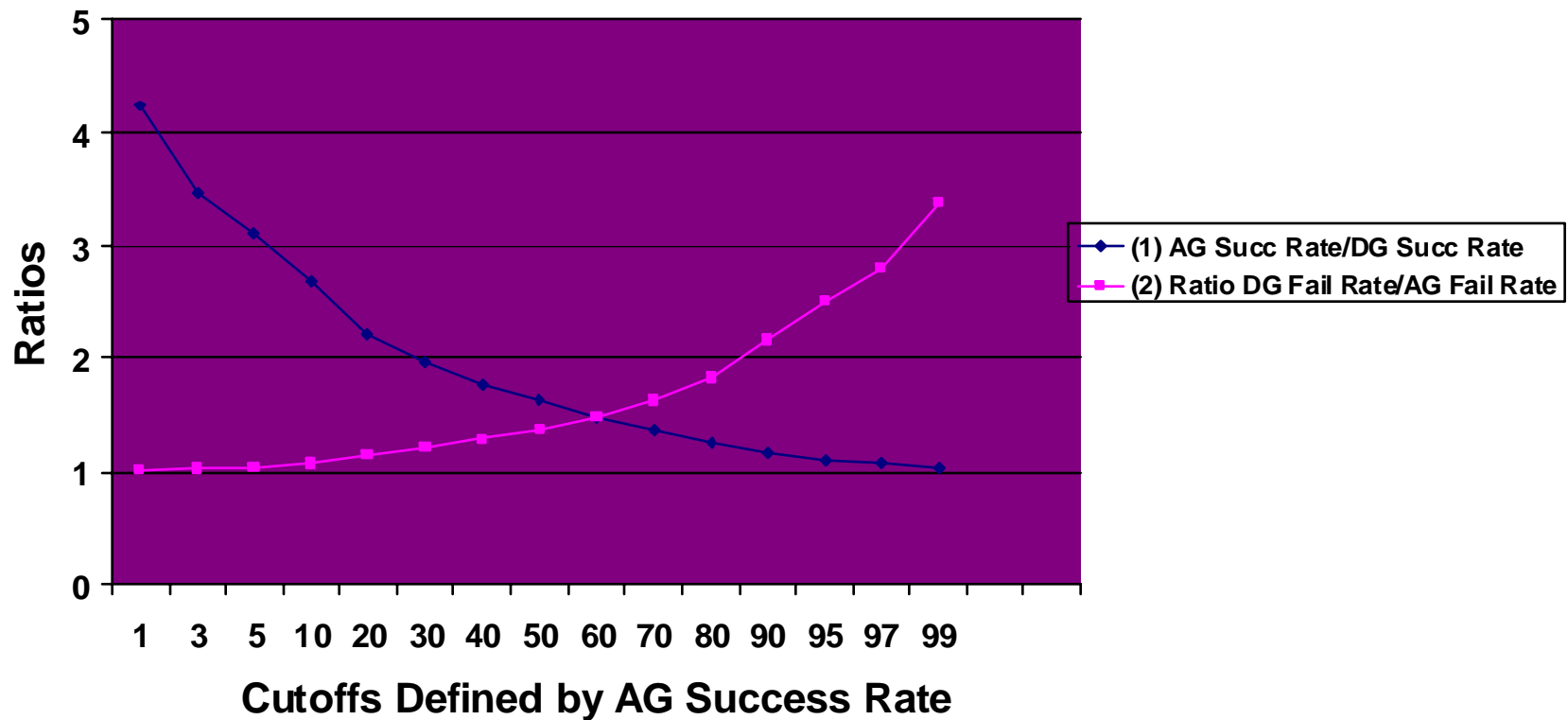


Fig 3: Ratios of (1) AG Success Rate to DG Success Rate, (2) DG Fail Rate to AG Fail Rate, and (3) DG Fail Odds to AG Fails Odds

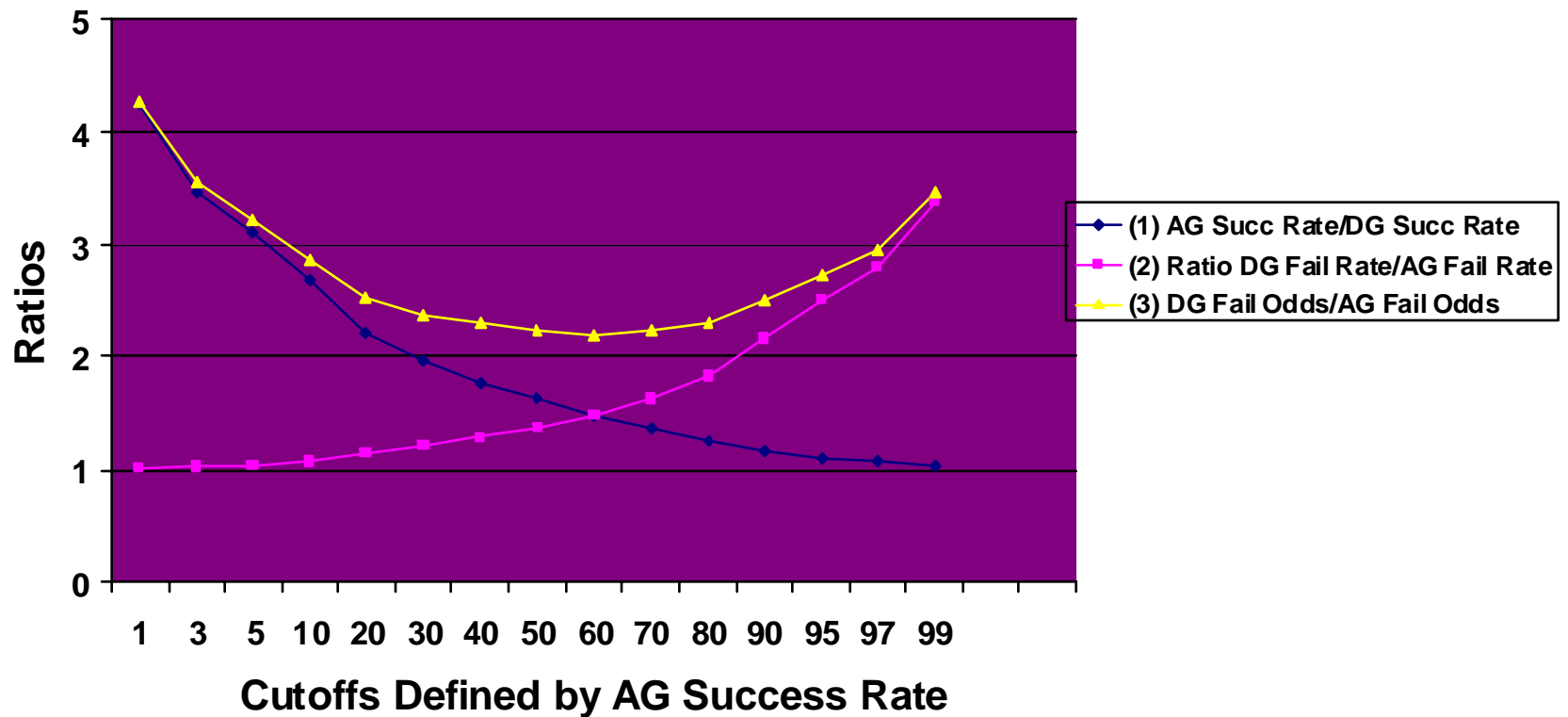
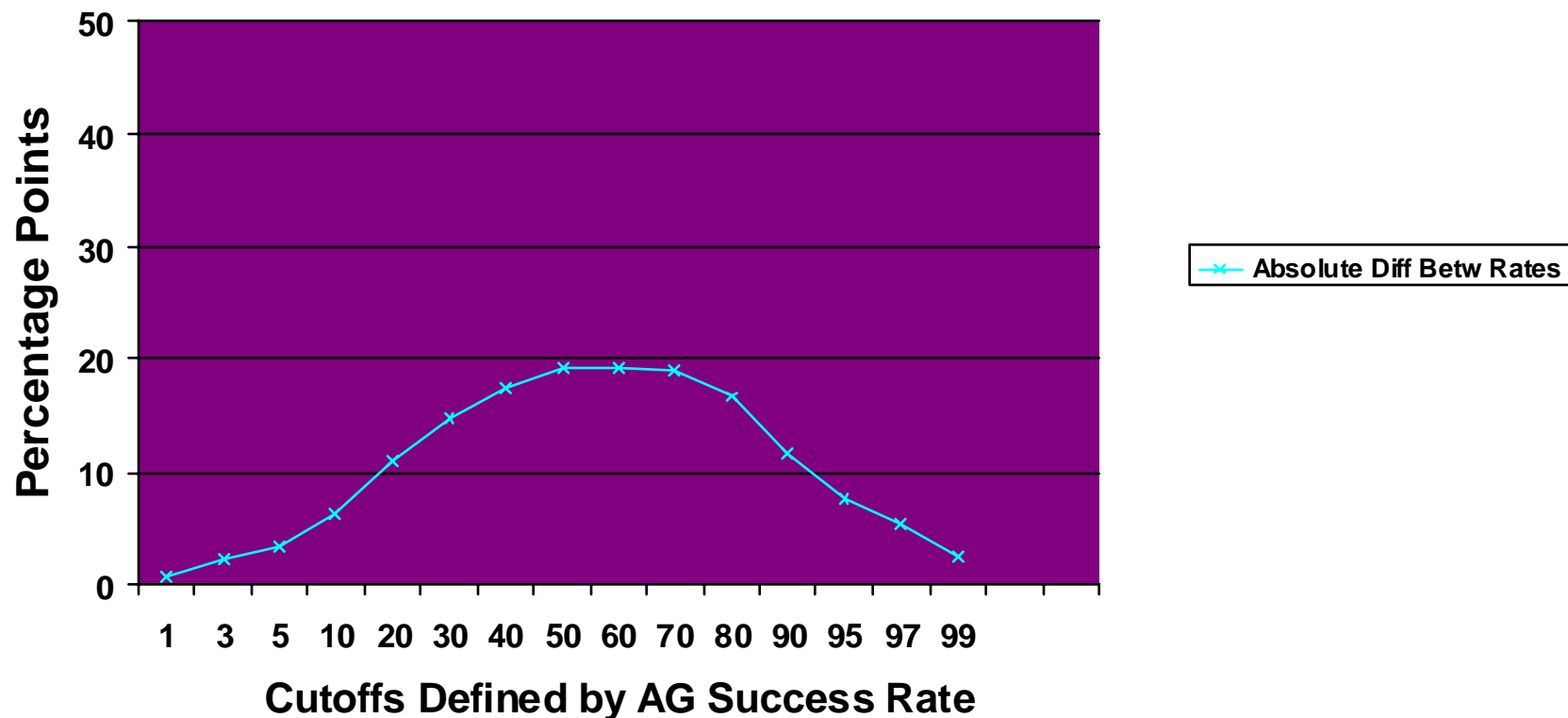


Fig 4: Absolute Difference Between Success (or Failure) Rates of AG and DG at Various Cutoffs



Other Illustrative Data

- Income data (*Chance* article)
- NHANES data (D41, BSPS 2007)
- Framingham calculator (do it yourself)
- Boston (or any) Marathon results

Two Contrasting Studies of Absolute Differences

- Trivedi et al. Trends in the quality of care and racial disparities in Medicare managed care. *N Engl J Med* 2005;353:692-700
 - Increasing overall rates; **decreasing** absolute differences
- Jha et al. Racial trends in the use of major procedures among the elderly. *N Engl J Med* 2005;353:683-691
 - Increasing overall rates: **increasing** absolute differences
- See D2, D40, D41

Illustration Based on Hemodialysis

- Sehgal AR. Impact of quality improvement efforts on race and sex disparities in hemodialysis. JAMA 2003;289:996-1000

- Rates of adequate dialysis

	White	Black
1993	46%	36%
2000	87%	84%

Summary of changes:

Absolute diff: decline from 10 to 3

Relative diff in adequate dialysis: decreased from 70% to 10%

Relative diff in inadequate dialysis: increased from 19% to 23%

Which measure is best?

- None alone can indicate whether a change between rates is other than solely a consequence of changes in prevalence.
- Further, each measure can change in one direction even when there in fact is a meaningful change in the opposite direction.
- Can we actually measure health disparities?

Varied Implications of Measurement in Terms of Relative Differences in Adverse Outcome

- As healthcare and health improve, disparities will seem to increase.
- Most effective measures (even ones seemingly focused on the disadvantaged) will seem to increase disparities (see D3 re Back to Sleep Program).
- Disparities will seem to be larger in areas of among subpopulations where adverse outcomes are rarest.
- Disparities tend to be larger with respect to outcomes that are rarest (also pertinent to the National Healthcare Quality Report).

Secondary Issues in NHDR

- Clarifying of methods
- Include summary tables for each group comparison (e.g., black-white) showing for each core measure and new rates and calculation of change over time
- Other technical issues