Rethinking the Measurement of Demographic Differences in Outcome Rates
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There are four standard measures by which observer appraise demographic differences in rates at which advantaged and disadvantaged experience favorable or adverse outcomes: (1) relative (percentage) differences between rates of experiencing the outcome; (2) relative differences between rates of avoiding the outcome (i.e., experiencing the opposite outcome); (3) absolute (percentage point) differences between the outcome rates; and (4) odds ratios. None of these measures provides a sound basis for quantifying the differences in the circumstances of advantaged and disadvantaged groups reflected by their outcome rates (or, otherwise put, the strength of the forces causing the groups' outcome rates to differ) because, for reasons inherent in the underlying risk distributions, each measure tends to be systematically affected by the prevalence of an outcome.

The rarer an outcome the greater tends to be the relative difference between rates at which advantaged and disadvantaged experiencing the outcome and the smaller tends to be the relative difference between rates at which such groups avoid the outcome. Thus, for example, as mortality and poverty decline, relative differences in experiencing those outcomes tend to increase while relative differences in avoiding them tend to decrease; as rates of appropriate healthcare increase, relative differences in receipt of such care tend to decrease while relative differences in failing to receive such care tend to increase. Relaxing mortgage lending criteria or public school discipline standards tends to increase relative differences in adverse lending and discipline outcomes while reducing relative differences in the corresponding favorable outcomes. Similarly, within populations where adverse outcomes are comparatively rare (e.g., persons with high education or high income, British civil servants, Norway and Sweden) relative demographic differences in adverse outcomes tend to be larger, while relative differences in the corresponding favorable outcomes tend to be smaller, than within populations where adverse outcomes are comparatively common.

Absolute differences and odds ratios also tend to be affected by the prevalence of an outcome changes, though in a more complicated way than the two relative differences. Roughly, as uncommon outcomes become more common absolute differences tend to increase; as common outcomes become even more common absolute differences tend to decrease. Further, as the prevalence of an outcome changes, the absolute difference tends to change in the same direction as the smaller relative difference. Difference measured by odds ratios tend to change in the opposite direction of absolute differences.

This workshop will illustrate these patterns with hypothetical and real data and explain how efforts to appraise demographic differences in the law and the social and medical sciences have been undermined by a failure to recognize the patterns or their implications. The workshop will

also show that the only theoretically sound way to quantify the strength of the forces causing outcome rates of advantaged and disadvantaged groups to differ is to derive from the groups' favorable or adverse outcome rates the difference between means of the underlying risk distributions.

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