

James P. Scanlan
Attorney at Law
1529 Wisconsin Avenue, NW
Washington, D.C. 20007
(202) 338-9224
jps@jpscanlan.com

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Janet M. Corrigan, PhD, MBA
President and Chief Executive Officer
National Quality Forum
601 Thirteenth Street, NW
Suite 500 North
Washington, DC 20005

Re: Measuring Healthcare Disparities

Dear Dr. Corrigan:

I recently reviewed the National Quality Forum's 2008 document styled "National Voluntary Consensus Standards for Ambulatory Care—Measuring Healthcare Disparities." The document crucially fails to appreciate a serious problem in health and healthcare disparities research arising from the fact that researchers rely on various standard measures of differences between outcome rates to appraise the size of disparities without recognizing that each such measure tends to be systematically affected by the overall prevalence of an outcome.

Most notably, the more common an outcome the smaller tends to be the relative difference in experiencing it and the larger tends to be the relative difference in failing to experience it. Thus, as procedures like mammography or immunization increase in overall prevalence, relative differences in mammography and immunization rates tend to decline while relative differences in rates of failing to receive mammography or immunization tend to increase. Absolute differences and odds ratios tend to also to change as the overall prevalence of an outcome changes, though in a more complicated way. Roughly, as uncommon outcomes become more common, absolute differences between rates tend to increase; as common outcomes become even more common, absolute differences between rates tend to decline. Differences measured by odds ratios tend to change in the opposite direction of absolute differences between rates. Thus, none of these measures can alone indicate whether health or healthcare disparities are changing in a meaningful sense.

More than a hundred references explaining these patterns may be found on the [Measuring Health Disparities](#)¹ page of [jpscanlan.com](#) (MHD) and the nuances of the patterns may be found on the [Scanlan's Rule](#) page of the same site. Several key references are listed in note 2 below.² The [Solutions](#) sub-page of MHD describes a method for measuring health and healthcare disparities that is not affected by the overall prevalence of an outcome and the [Solutions Database](#) sub-page provides a downloadable database with which to implement the approach. While the approach is imperfect in a number of respects, it remains far superior to the near universal practice of relying on one or another standard measure of differences between outcome rates without regard to the way the measure tends to be affected by the overall prevalence of the outcome.

The item listed as (e) in note 2, which comments on an award-winning 2008 study by Morita *et al.*, is particularly illustrative of the disarray in the area. Morita and colleagues examined the effect of a school-entry Hepatitis B vaccination requirement on racial and ethnic disparities in vaccination rates. The requirement substantially increased overall vaccination rates. Relying on relative differences in vaccination rates, the study found that racial and ethnic disparities in vaccination rates decreased dramatically. The comment explains that the National Center for Health Statistics (NCHS), which insists on relying on relative differences in adverse outcomes (here, the failure to be vaccinated), would have found dramatic increases in disparities. It also explains why researchers or entities that employ other approaches would have reached still different conclusions as to directions of changes in disparities over various time frames from those that Morita and colleagues reached or that NCHS would have reached.

As discussed in references (b) and (e) of note 2, the NCHS position mentioned above is a misguided response to reference (c). But lately, in the United States,³ and more so in

¹ The underlining of various references in the text of this document reflects the fact, in order to facilitate review of those references, links to the references are provided in an electronic copy of this letter posted on the Letters sub-page of the Measuring Health Disparities page of [jpscanlan.com](#).

² (a) Scanlan JP. [Can we actually measure health disparities?](#) *Chance* 2006;19(2):47-51 ; (b) Scanlan JP. [Measuring health disparities.](#) *J Public Health Manag Pract* 2006;12(3):293-296 (responding to Keppel KG, Percy JN. Measuring relative disparities in terms of adverse events. *J Public Health Manag Pract* 2005;11(6):479-483) ; (c) Scanlan JP. [Race and mortality.](#) *Society* 2000;37(2):19-35; (d) Scanlan JP. Measurement Problems in the National Healthcare Disparities Report, presented at American Public Health Association 135th Annual Meeting & Exposition, Washington, DC, Nov. 3-7, 2007 ([PowerPoint Presentation](#); [Oral Presentation](#); [Addendum](#)); (e) Scanlan JP. [Study illustrates ways in which the direction of a change in disparity turns on the measure chosen.](#) *Pediatrics* Mar. 27, 2008 (responding to Morita JY, Ramirez E, Trick WE. Effect of school-entry vaccination requirements on racial and ethnic disparities in Hepatitis B immunization coverage among public high school students. *Pediatrics* 2008;121:e547-e552).

³ (a) Mechanic D. Disadvantage, inequality and social policy. *Health Affairs* 2002;21(2):48-59; (b) Mechanic D. Who shall lead: Is there a future for population health? *J Health Politics, Policy and Law* 2003;28(2):421-442; (c) Mechanic D. Population health challenges for science and society. *Milbank Quarterly* 2007;85(3):553-559.

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Europe,⁴ there has been increasing recognition of the existence of the patterns I describe and of their pertinence to the understanding of health and healthcare disparities.

Finally, I note that pay-for-performance is a subject of considerable interest to the National Quality Forum, though I do not know whether it has yet addressed the subject of the potential implications of pay-for-performance on healthcare disparities. In any event, efforts to tie pay-for-performance to healthcare disparities will be seriously misguided until disparities measurement issues have been satisfactorily resolved. See the [Pay for Performance](#) sub-page of MHD.

I hope your organization will give careful attention to these issues in its further efforts to provide guidance on reviewing or measuring health and healthcare disparities.

Sincerely,

/s/ **James P. Scanlan**

James P. Scanlan

⁴ (a) Carr-Hill R, Chalmers-Dixon P. [The Public Health Observatory Handbook of Health Inequalities Measurement](#). Oxford: SEPHO; 2005 (171-172); (b) Houweling TAJ, Kunst AE, Huisman M, Mackenbach JP. [Using relative and absolute measures for monitoring health inequalities: experiences from cross-national analyses on maternal and child health](#). *International Journal for Equity in Health* 2007;6:15; (c) Eikemo TA, Skalicka V, Avendano M. [Variations in health inequalities: are they a mathematical artefact?](#) *International Journal for Equity in Health* 2009;8:32; (d) Bauld L, Day P, Judge K. Off target: A critical review of setting goals for reducing health inequalities in the United Kingdom. *Int J Health Serv* 2008;38(3):439-454.