

James Scanlan <jps@jpscanlan.com>

7/27/2015 4:59 PM

Re: Fwd: NHDR Measurement

To Moy, Ernest (AHRQ) <ernest.moy@ahrq.hhs.gov>

Any tracking of the direction of the EES with the absolute difference is only happenstance. In the example, the EES decreased while the absolute difference increased (though actually neither changed very much).

But a key point in my letter was while AHRQ measure disparities in terms of relative differences in adverse outcome, it measure changes in disparities in terms absolute changes in rates (which is the same as changes in absolute differences). And particularly in the rate ranges at issue for the things AHRQ examines, as healthcare improves, absolute differences will tend decrease while relative difference will in adverse outcomes will tend to increase. Thus, AHRQ will report decreases in disparity during a period even though it finds it finds a larger disparity at the end of the period than at the beginning of the period (as illustrated in Table 6 at page 21 of the letter to Dr. Kronick).

A separate issue, however, is whether AHRQ is in fact measuring disparities in terms of absolute differences between rates. As discussed at the top of page 23, if one divides the absolute change by the baseline for each group, one gets the relative change. Depending of whether baseline rate is the favorable or the adverse outcome, this will be the relative change in either the favorable or the adverse outcome. I know that AHRQ intends to rely on relative differences in adverse outcomes. But when it decided to measure disparities in terms of absolute change in baseline rates, it is possible that it focused on the favorable outcome, because, if one relies absolute changes, it does not matter whether one is focused on the favorable or the adverse outcome. But if one is going to divide the absolute change by the baseline rate, which relative difference one examines make a great difference.

As to method for the figures in the table. Go the ES_Calculator.xls file, click on Proportions (Dischotomous); click on the Proportions1 tab; in the bottom left, enter the favorable outcome rate for the advantaged group in the Treatment Group field and the favorable outcome rate for the disadvantaged group in the Control Group field. The .535 and .175 values in the first row of the table will give you a value of 1.022434 in the Probit Method, d = field.

Regards,

Jim Scanlan

-----Original Message-----

From: Moy, Ernest (AHRQ) [mailto:Ernest.Moy@ahrq.hhs.gov]

Sent: Monday, July 27, 2015 01:05 PM

To: 'James Scanlan'

Subject: RE: Fwd: NHDR Measurement

Thanks for the information. I am glad that EES seems to track well with absolute differences since that is how we assess changes in disparities. However, I am still confused about how to calculate the EES. From your last example, how does one calculate the EES of 1.02 in 2000 and 1.05 in 2008?

Ernest Moy, MD, MPH
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From: James Scanlan [mailto:jps@jpscanlan.com]

Sent: Tuesday, July 14, 2015 3:37 PM

To: Moy, Ernest (AHRQ)

Subject: Re: Fwd: NHDR Measurement

Below is the information you requested, with a couple of examples. Initially, however, let me note a couple of things that may be the subject of a follow-up letter to AHRQ. Whether or not these are things that AHRQ can do anything about, they involves things AHRQ should know.

First, in March 2015 the Center for Medicare & Medicaid Services issued its National Impact Assessment.[1] The document (at 167) reflects the mistaken view, based on the 2013 NHDR, that the NHDR will find a healthcare disparity where there exists a 10 percentage point difference between the outcome rate the advantaged and the disadvantaged groups. To my mind, issues addressed in Section B of my letter aside, the NHDR is pretty clear in that it identifies a disparity (sometimes termed meaningful or important) based on a 10 percent (i.e., relative) difference, not a 10 percentage point difference.

Second, despite some prior confusion on my part (and again putting Section B of my letter aside), it is pretty clear that the NHDR, in an effort to comply with National Center for Health Statistics Healthy People 2010 approach, measures all disparities in terms of relative differences in *adverse* outcomes. Thus, AHRQ should be made aware that NCHS has recently published Health People 2020 guidance that measures healthcare disparities in terms of relative differences in *favorable* outcomes.[2]. It gives as an example that in 2013, for persons between 25 and 64, the ratio of the rate of insurance for persons with an advanced degree (94.8%) was 1.671 times the rate of persons with less than a high school education (56.7%).[3] Under the Healthy People 2010 approach (and that used in the NHDR) the disparity would be appraised in the basis of the 8.327 ratio of the uninsurance rate of persons with less than a high school education (43.3%) to the rate of persons with an advanced degree (5.2%). I understand from Makram Talih that NCHS will soon issue a Statistical Note on this approach.

Turning to your specific question, I have generally implemented that measurement approach referenced in my letter (which I term the EES) mechanically. The method has been describe to me in the following formulaic terms: “EES” is simply the coefficient of a binary (0,1) variable, z , in a probit model for two proportions: $p = \Phi(\alpha + \beta z)$ where $\Phi(\cdot)$ is the standard normal CDF, α is the intercept and β is EES.” Often the results I present are drawn from the probit method in the downloadable Excel file made available by David B. Wilson of George Mason University.[4]

In the case of the insurance rates cited in the above-referenced NCHS materials, the difference between the insurance rates (or uninsurance rates) would be 1.56 standard deviations. The table below gives another example, while also showing the stark contrast in appraisal of disparities in terms of relative differences in favorable outcomes (as now seems to be proposed by NCHS) rather than relative differences in adverse outcomes (the approach NCHS adopted in 2004 and that was thereafter adopted by AHRQ). The table is based on the 2010 NHDR listing, in Table H.3 (at 15), as

one of the largest disparities that was not improving. The table showed a 3.6 ratio (rounded from 3.56) of the 2008 rate at which poor female Medicare beneficiaries reported never being screened for osteoporosis with a bone density measurement (47.4%) to the rate at which high income beneficiaries reported never having been screened (13.3%).

The table below shows the screening rates for the high income and poor groups in 2000 and 2008, along with various measures. It shows how one would reach dramatically different conclusions about the size of disparities at various points in time and changes over time based on relative differences in favorable outcomes and relative differences in adverse outcomes. The final column presents the EES measure I discussed and which indicates a negligible increase in disparity. (The absolute difference, which changed very little, presumably underlies the report's referring to the disparity as not improving rather than increasing substantially (as Healthy People 2010 would have found).)

Table	Period	HighIncRt	PoorRate	HI/P FavRatio	Poor/Hi No Screen Ratio	AD	EES
10_1_1_1	2000	53.50%	17.50%	3.06	1.77	36	1.02
10_1_1_1	2008	86.70%	52.60%	1.65	3.56	34.1	1.05

This method also provides the soundest approach to appraising changes in quality and access. The 2009 report (at 28) describes how a change in quality is characterized according to the largest percentage changes (i.e., a change from 90% to 94% is treated as a total change of 40% (4%/10%), appraised geometrically by year) rather than a total change of 4.44% (4% over 90%). Though determinations of whether the situation is improving is unaffected by which measure one examines, the size of the change is substantially affected by which outcome is examined. The method above would describe the change as .273 standard deviations.

Best regards,
Jim Scanlan

1. <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/downloads/2015-National-Impact-Assessment-Report.pdf>
2. <http://www.healthypeople.gov/sites/default/files/HP-Disparities-Users-Guide.pdf>
3. <http://www.healthypeople.gov/2020/data/disparities/detail/Chart/3966/5.1/2013>
4. <http://mason.gmu.edu/~dwilsonb/ma.html>

-----Original Message-----

From: Moy, Ernest (AHRQ) [<mailto:Ernest.Moy@ahrq.hhs.gov>]

Sent: Monday, July 13, 2015 01:22 PM

To: 'James Scanlan'

Subject: RE: Fwd: NHDR Measurement

The letter was referred to me for the attached response. I am not sure what kind of calculation you propose, but perhaps you could provide an equation for me to look at. Thanks for your interest.

Ernest Moy, MD, MPH
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ernest.moy@ahrq.hhs.gov
From: James Scanlan [<mailto:jps@jpscanlan.com>]
Sent: Thursday, July 02, 2015 1:57 PM
To: Moy, Ernest (AHRQ)
Subject: Fwd: Fwd: NHDR Measurement

Dear Dr. Moy:

Below is a link to a July 2, 2015 letter (alluded to in the earlier note) to the Director of the Agency for Healthcare Research and Quality regarding health and healthcare disparities measurement issues.

http://jpscanlan.com/images/Letter_to_Agency_for_Healthcare_Research_and_Quality_July_1,_2015_.pdf

The letter mentions you (at 6) among persons who are familiar with the issues it raises.
Best regards,
Jim Scanlan

-----Original Message-----

From: James Scanlan [<mailto:jps@jpscanlan.com>]
Sent: Tuesday, May 26, 2015 02:48 PM
To: 'Moy, Ernest (AHRQ)'
Subject: Re: Fwd: NHDR Measurement

Dear Dr. Moy:

Thanks for the quick response and the answers. I have a few clarifying questions.

Let me first note that it is my intention to formally write AHRQ regarding measurement issues in the NHDR. My basic issue involves the failure to recognize the ways measures change as the frequency of an outcome changes. These are issues I have covered in a lot of places (not always correctly describing the way the NHDR measured disparities). See reference 1 and 2 after the signature. But I wanted also to address what I believe is an anomaly arising from changes in the 2010 report and I wanted to be completely clear on just how the NHDR has been measuring disparities over the last few years.

For it seemed to me that beginning in 2010 the NHDR went from (a) measuring changes in

disparities in terms of percentage point changes in relative differences (which is the Healthy People 2010 approach) to (b) measuring the comparative size the percentage point change in rates of the subject group and the reference group. That caused some disparities that would previously have been deemed as increasing instead to be decreasing. But I am not sure whether this approach changed in the 2013 or 2014 report.

In any case, I have four groups of questions below. Section 1 just seeks clarification regarding my first table in the note to Karen Chaves. Section 2 explains my understanding of the changes in measurement in the 2010 report and seeks both clarification as to whether my interpretation is correct and some clarification about how the NHDR reached certain results that it did (with regarding very rare outcomes). Section 3 has questions about the meaning of certain language changes in language in the 2013 and 2014 reports. Section 4 has a question about language usage beginning in the 2011 report.

1.

With regard to the rates in table in my note to Karen Chavez, I had wanted to know, not whether AHRQ would find a disparity, but how it would characterize the size of the disparity at each point in time. By way of clarification, Table 1 below adds to the table sent to Ms. Chaves the following fields: (a) the white to black favorable outcome ratio and (b) the black to white adverse outcome ratio, and (c) the absolute difference.

Table 1.

Period	Favorable Outcome	White	Black	(a) White/BlackFavRatio	(b) B/W Adverse Ratio	AbsDif
Year 1	A	20.00%	9.00%	2.22	1.14	0.11
Year 5	A	40.00%	23.00%	1.74	1.28	0.17
Year 1	B	60.00%	40.00%	1.50	1.50	0.2
Year 5	B	90.00%	78.00%	1.15	2.20	0.12

Thus, with respect to each outcome (and assuming that the size of the disparity would be characterized in relative terms), I wanted to know whether AHRQ would be relying on (a) or (b). It has for a time been my understanding that, like NCHS, AHRQ in the NHDR measures disparities in terms of relative difference in the adverse outcome – that is, as in (b) above.

So the disparities have gotten much larger in each case, even though in terms of the percentage point changes in each group's rate, the disparity for outcome B would be deemed to be decreasing. Is my interpretation correct?

2.

Table 2 shows reductions in the adverse outcome rates of the advantaged group (AG) and disadvantaged group (DG) at the beginning and end of a five year period, with the rate ratios at the DG rate to the AG rate.

Table 2

Period	DG Adverse Rt	AG Adverse RT	DG/AG Rate Ratio
Yr0	37.00%	20.00%	1.85
Yr5	13.00%	5.00%	2.60

It is my understanding that prior to the 2010 report, this would be deemed an increase in disparity of 15 percentage points per year (i.e., the 75 percentage point difference between 1.85 and 2.60, divided by 5)

But beginning in the 2010 report, the matter was examined in terms of the comparative size of the changes in the two group's rates (in terms of percentage points) as derived from a regression. Thus, nuances of the regression aside, the analysis would be basically that in Table 3.

Table 3

Group	Yr0 adverse rt	Yr5 adverse rt	Perc Point Change
AG	20.00%	5.00%	15
DG	37.00%	13.00%	24

Thus, there would have been a decrease in disparity of 1.8 percentage points per year (i.e., the 9 percentage point difference divided by 5).

As discussed at the outset, if I understand it correctly, this change in approach went from one of measuring changes in disparities in terms (a) percentage point changes in relative differences to (b) differences between the percentage point changes of each group's rate.

In the hypothetical in tables 2 and 3, this change would cause the disparity that was increasing under the pre-2010 reports to become one that was decreasing under the 2010 report's approach. Also, it seems to me, if the NHDR was continuing to look at the size of disparities, it would find a larger disparity at the end of the period than at the beginning of the period, even though the NHDR found a decline in disparity.

The above example and the examples in the note to Karen Chaves are based on hypothetical data. But Table 10 of my FCSM presentation (in reference 2) show a number of instances that were highlighted in the 2012 report as among the fastest decreasing disparities where the relative difference in the adverse outcome was increasing, though the absolute change was greater for the disadvantaged groups than the advantaged group.

The approach adopted in 2010 seems also to raise question about the measurement of disparities where the outcomes are very rare. If each group's adverse outcome rate is less than 1% (as, for example, in news AIDs cases per 100,000 population, lower extremity amputations per 100 population, and maternal deaths per 100,000 live births), absent some epidemic-sized increase, neither group's rates will change by anything approaching one percentage point even over an extended period. Thus, there it would seem impossible for there to be a yearly one percentage point difference in the size of the percentage point changes even when the two group's rates change in different directions. Yet, Table H3 (at 15) of the 2010 report and Table H.3 (at 11) of the 2011 report show a number of changes for these and other rare outcomes.

So what is the basis for the NHDR to identify those changes?

3.

Rare outcomes issues aside, the approach adopted in 2010 appears to have continued until at least the 2012 report (certain nuances aside), which, as noted, explains Table 10 in my FCSM presentation. Also, your response to my question 4 to Karen Chaves indicates that that approach is also used today.

But the 2013 report added this language (at 13, emphasis added):

“New this year, the difference in annual change between a group and its reference group **relative to the reference group baseline estimate** was calculated. Determinations of whether subgroup differences have grown, narrowed, or remained the same were based on estimated differences in annual change as specified below:”

The 2013 report later stated (at 16, emphasis added):

“When the difference in rates of change is significant and when **the difference relative to the reference group’s baseline** is greater than 1% per year, we label the disparity as improving if the selected group’s rate is higher than the reference group’s rate and worsening if the reverse.”

I am trying to understand the meaning “relative to the reference group’s baseline rate.” Is that a reference to DG’s 20% initial rate? Does this mean that the 9 percentage point difference was divided by the baseline rate for the advantaged group (i.e., 9 percentage points divided by 20 percent)? Or what does it mean? How would the 2013 report interpret the changes in Table 3 above?

Further, the 2014 report then had the following language (at 14):

“For each group, estimates were divided by earliest estimate so that earliest indexed estimate equaled one and subsequent indexed estimates were relative to the earliest estimate.”

This sounds to me like the percentage point changes for each group are divided by the earliest estimate. That would seem to yield a relative change for each group, as shown in Table 4.

Table 4

Group	Yr1	Yr5	Perc Point Change	Rel Change
AG	20.00%	5.00%	15	75.00%
DG	37.00%	13.00%	24	64.86%

Under this approach, as I understand it, the relative changes would be 9.14 percentage points greater for AG than DG. So there would be an increase in disparity of 1.828 percentage points per year. Is that correct?

Again, your earlier response suggests that this is not correct and that there would be a decrease. But then what is the meaning of the language about dividing by the earliest estimate?

4.

In the 2010 report (at 43) the criteria for a meaningful disparity included the following language:

“Second, the relative difference between the comparison group and the reference group must be at least 10% when the measure is framed positively as a favorable outcome or negatively as an adverse outcome.”

In the 2011 report at 43 the language was changed as follows (at 43, emphasis added):

“Second, the relative difference between the comparison group and the reference group must have an **absolute value** of at least 10%.”

The new language, with the phrase “absolute value” was repeated in the 2012 (at 28) and 2013 report (at 28). The 2014 methods report (at 13) also contained the phrase “absolute value”:

The relative difference between the priority population group and the reference group must have an absolute value of at least 10% when framed positively or negatively ($(p1-p2)/p2 > 0.1$ OR $[(1-p1)-(1-p2)]/(1-p2) > 0.1$).

Is there a reason for the adding of the phrase “absolute value”?

Best regards,
Jim Scanlan

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1. “Race and Mortality Revisited,” Society (July/Aug. 2014)
http://jpscanlan.com/images/Race_and_Mortality_Revisited.pdf

2. “Measuring Health and Healthcare Disparities,” Proceedings of the Federal Committee on Statistical Methodology 2013 Research Conference. (March, 2014)
Paper: http://jpscanlan.com/images/2013_Fed_Comm_on_Stat_Meth_paper.pdf
Presentation: http://jpscanlan.com/images/2013_FCSM_Presentation_pdf.pdf

-----Original Message-----

From: Moy, Ernest (AHRQ) [<mailto:Ernest.Moy@ahrq.hhs.gov>]
Sent: Thursday, May 14, 2015 09:56 AM
To: 'Chaves, Karen H. (SAMHSA/OC)', 'jps@jpscanlan.com'
Subject: RE: Fwd: NHDR Measurement

Karen, thanks.

Mr. Scanlon, I tried to answer your questions below. If unclear, feel free to contact me directly.

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From: Chaves, Karen H. (SAMHSA/OC)
Sent: Wednesday, May 13, 2015 7:28 PM
To: 'jps@jpscanlan.com'
Cc: Moy, Ernest (AHRQ)
Subject: Re: Fwd: NHDR Measurement

Mr. Scanlon,
I am no longer at AHRQ. I have copied Dr. Ernest Moy who can assist you.

Thank you.

From: James Scanlan [<mailto:jps@jpscanlan.com>]
Sent: Wednesday, May 13, 2015 07:02 PM
To: Chaves, Karen H. (SAMHSA/OC)
Subject: Fwd: NHDR Measurement

Dear Ms. Chaves:

This forward a string of exchanges in which I sought come clarification on methodology for the National Healthcare Disparities Reports or 2012 and 2013. There remain some outstanding questions. But I don't mind ignoring those, if I can clarify a few things, which are mainly about the 2014 report.

The table below shows black and white rates of experiencing two types of favorable outcomes at two points in time. One can think of the outcomes as receipt of a particular type of vaccine. I would like two questions answered for each situation:

1. How would AHRQ, for purposes of the NHDR, characterize the each disparity at each point in time?

ASSUMING DIFFERENCES WERE STATISTICALLY SIGNIFICANT WITH $P < .05$, WE

WOULD SAY THAT IN ALL CASES BELOW BLACKS WERE LESS LIKELY THAN WHITES TO HAVE THE OUTCOME OF INTEREST.

2. With respect to each disparity, would AHRQ regard the disparity to have increased over time or decreased over time?

WE WOULD NOT COMMENT ON CHANGES OVER TIME UNLESS THERE WERE AT LEAST 4 TIME POINTS WITH WHICH TO CALCULATE A CHANGE OVER TIME SLOPE USING WEIGHTED LEAST SQUARE REGRESSION.

ASSUMING WE HAD ENOUGH TIME POINTS, FOR OUTCOME A, WE WOULD SAY THAT THE WHITE RATE IS DECREASING MORE QUICKLY THAN THE BLACK RATE. IF THE DIFFERENCE IN RATES IS STATISTICALLY SIGNIFICANT WITH $P < .10$, WE WOULD SAY THAT THE DISPARITY IS INCREASING.

FOR OUTCOME B, WE WOULD SAY THAT THE BLACK RATE IS DECREASING MORE QUICKLY THAN THE WHITE RATE. IF THE DIFFERENCE IN RATES IS STATISTICALLY SIGNIFICANT WITH $P < .10$, WE WOULD SAY THAT THE DISPARITY IS DECREASING.

Period	Favorable Outcome	White	Black
Year 1	A	20.00%	9.00%
Year 5	A	40.00%	23.00%
Year 1	B	60.00%	40.00%
Year 5	B	90.00%	78.00%

Two further questions about the 2014 report.

3. At page 7 the report states with respect to identifying a situation where the disadvantaged group had worse health: "Population had worse access to care than reference group. Differences are statistically significant, are equal to or larger than 10%, and favor the reference group."

It is my understanding that in the quoted statement "10%" (as clarified on page 13 of 2014 National Healthcare Quality and Disparities Report Introduction and Methods document) means 10 percent and not 10 percentage points. That is, for example, where the black non-insurance rates is 18% and the white rate is 10%, the "larger than 10%" requirement would be met because 18% is 80% percent greater than 10%, although 18% is only 8 percentage points greater than 10%. Is that understanding correct?

YES, THE 10% IS IN RELATIVE TERMS AND NOT ABSOLUTE TERMS AND WE WOULD CALCULATE AS YOU HAVE DONE.

4. At page 8, the report states with respect to worsening disparity: "Disparities are getting larger. Differences in rates between groups are statistically significant and reference group rates exceed population rates by at least 1% per year."

It is my understanding that in this case "1%" means 1 percentage point not 1 percent. Is that

understanding correct.

YES, THE 1% PER YEAR DIFFERENCE IS IN ABSOLUTE TERMS SO IF POPULATION 1 HAD A RATE OF CHANGE OF 1% PER YEAR, POPULATION 2 WOULD NEED A RATE OF CHANGE OF 2% PER YEAR FOR US TO INDICATE A DIFFERENCE, AGAIN ASSUMING THE DIFFERENCE HAS $P < .1$.

I apologize for misspelling your name in the several earlier emails.

Best regards,

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-----Original Message-----

From: James Scanlan [<mailto:jps@jpscanlan.com>]

Sent: Friday, October 3, 2014 12:20 PM

To: 'Chaves, Karen H. (AHRQ)'

Subject: Re: NHDR Measurement

Dear Ms. Chavez:

This continues an exchange from November of last year with respect to certain questions about measurement in the National Healthcare Disparities Report, which have not yet been answered. I add a few additional points based in part on reading the 2013 report. If these questions can be answered, I will review whether it may be unnecessary to answer the pending questions.

1. At page 15, the report states:

?A new approach to assess change in disparities is introduced this year. First, a selected group's rate of change and its reference group's rate of change are calculated using weighted least squares regression. Next, this difference in rates of change is assessed for statistical significance. Then, the difference in rates of change relative to the reference group's baseline estimate is calculated.?

The question here is whether the rate of change is calculated in terms of (a) relative change in favorable outcome (e.g., receipt of treatment); (b) relative change in the corresponding adverse outcome; or (c) the absolute (percentage point) change.

2. Previously, online materials related to the NHDR included the backup data tables. When I looked a few weeks ago, I could not find those for the 2013 report, though the tables for the other years were then available. When I looked today, I could not find any of the back up tables.

The question here is where might I find the tables from the earlier years and will the tables underlying the 2013 report be available soon.

Sincerely,
Jim Scanlan

-----Original Message-----

From: Chaves, Karen H. (AHRQ) [<mailto:Karen.Ho@ahrq.hhs.gov>]
Sent: Thursday, November 7, 2013 12:32 PM
To: 'James Scanlan'
Subject: RE: NHDR Measurement

Mr. Scanlan,
I'm sorry I wasn't able to respond to your email sooner, I was out of the office for a conference until today. We are working on the current drafts of the reports and I will need to confer with our team about this and get back to you afterwards.

Thank you.
Karen

From: James Scanlan [<mailto:jps@jpscanlan.com>]
Sent: Saturday, November 02, 2013 1:40 PM
To: Chaves, Karen H. (AHRQ)
Subject: Fwd: NHDR Measurement

Ms. Chavez,
One further matter. I am still trying to get a firm understanding if measurement in the 2012 NHDR. From our prior exchange and the indication that, like Healthy People 2012, the NHDR was measuring all disparities in terms of adverse outcomes, I was assuming that comparison of percentage changes underlying the determinations of directions of changes were based on adverse outcomes.

But I looked at some of the situations in Table H-2 at page 14 of the 2012 report where the table indicated a disparity had decreased but where they involved situations where (as shown in the tables below), while the disadvantaged group (DG) experiencing a larger percentage increase in the favorable outcome rate than the advantaged group (AG) (Columns A and B), DG experienced a smaller percentage decrease in the adverse outcome rates (Columns C and D). I include the percentage point changes (in columns E and F) in case that has something to do with the matter.

b4701 b 2 get nhdr 2012 h2 changes of interest										
Ref	AGBegR	AGEndR	DGBegR	DGEndR	(A)AGFavPercInc	(B)DGFavPercInc	(C)AGAdvPercDec	(D)DGAdvPercDec	(E)AGPPC	(F)DGPPC
3	66.50%	83.10%	49.40%	72.40%	24.96%	46.56%	49.55%	45.45%	0.17	0.23
4	63.90%	94.50%	45.70%	91.70%	47.89%	100.66%	84.76%	84.71%	0.31	0.46

b4701 b 2 get nhdr 2012 h2 changes of interest

Ref	AGBegR	AGEndR	DGBegR	DGEndR	(A)AGFavPerInc	(B)DGFavPerInc	(C)AGAdvPercDec	(D)DGAdvPercDec	(E)AGPPC	(F)DGPPC
10	63.90%	94.50%	44.70%	88.30%	47.89%	97.54%	84.76%	78.84%	0.31	0.44
11	57.90%	92.90%	41.50%	87.40%	60.45%	110.60%	83.14%	78.46%	0.35	0.46

The table below clarifies the comparisons at issue

Query46						
H2	Ref	AG	DG	BegYr	EndYr	Description
3	Table 2_12_1_14.1	W	B	2006	2010	Short-stay nursing home residents who were assessed and given pneumococcal vaccination
4	Table 2_9_2_6.1	W	Asian	2005	2010	Hospital patients age 65+ with pneumonia who received a pneumococcal screening or vaccination
10	Table 2_9_2_6.1	W	H	2005	2010	Hospital patients age 65+ with pneumonia who received a pneumococcal screening or vaccination
11	Table 2_9_2_5.1	W	H	2005	2010	Hospital patients age 50+ with pneumonia who received an influenza screening or vaccination

This issue is pertinent to a presentation I am giving the Federal Committee on Statistical Methodology Research Conference on Wednesday. So I would appreciate it if you could get back to me as soon as you can.

Thanks,
Jim Scanlan

-----Original Message-----

From: James Scanlan [<mailto:jps@jpscanlan.com>]

Sent: Friday, October 18, 2013 04:15 PM

To: 'Chaves, Karen H. (AHRQ)'

Subject: Re: NHDR Measurement

Thanks for getting back to me so soon after returning from the shutdown. I think that I understand the responses bgenerally ut need a clarification on number 4. I gather from your answer that the current approach changed from that used in in 2010. But was the reason for the 2010 finding of decrease that in 2010 you were examining favorable outcomes (or looking at the larger disparity, which in this case was disparity for the favorable outcome)?

Jim

-----Original Message-----

From: Chaves, Karen H. (AHRQ) [<mailto:Karen.Ho@ahrq.hhs.gov>]

Sent: Friday, October 18, 2013 01:25 PM

To: jps@jpscanlan.com

Subject: RE: NHDR Measurement

Mr. Scanlan,

Sorry for the delay. Below are responses to your questions. Please let us know if you need anything else.

Karen

From: James Scanlan [<mailto:jps@jpscanlan.com>]

Sent: Wednesday, October 02, 2013 6:44 PM

To: Chaves, Karen H. (AHRQ)

Subject: Re: NHDR Measurement

Dear Ms. Chavez:

This is to follow up on my earlier note. I have a need for the information for a paper I will be giving at the 2013 Federal Committee on Statistical Methodology Research Conference in November. The draft paper needs to be submitted by October 15.

Best regards,

Jim Scanlan

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-----Original Message-----

From: Chaves, Karen H. (AHRQ) [<mailto:Karen.Ho@ahrq.hhs.gov>]

Sent: Thursday, May 23, 2013 10:00 AM

To: "James Scanlan"

Subject: RE: NHDR Measurement

Thank you for your inquiry Mr. Scanlan. We are currently working to meet other deadlines. We will get back to you soon.

From: James Scanlan [<mailto:jps@jpscanlan.com>]

Sent: Wednesday, May 22, 2013 5:53 PM

To: Chaves, Karen H. (AHRQ)

Subject: NHDR Measurement

Dear Ms. Ho:

In 2007 you were good enough to provide me some information on measurement methods in the National Healthcare Disparities Report. Specifically, you advised that determinations of

whether a disparity was important in terms of the 10% difference was based between rates of advantaged and disadvantaged groups was whichever outcome (favorable or adverse) yielded the larger disparity. But you also advised that determination as to whether and how disparities were changing over time were in accordance with the Health People 2010 approach of measuring disparities in terms of relative differences in adverse outcomes.

I note that the 2009 report still had this language:

Criteria for importance are that the difference is statistically significant at the $\alpha=0.05$ level, two-tailed test, and that the relative difference is at least 10% different from the reference group when framed positively as a favorable outcome or negatively as an adverse outcome.

But that language disappeared and in the 2010 report this language appeared:

As in past NHQRs, regression analysis is used to estimate annual rate of change for each measure. Annual rate of change is calculated only for measures with at least 3 years of data. For most measures, trends include data points from 2001-2002 to 2007-2008. We label measures going in a favorable direction at a rate exceeding 1% per year as improving, going in an unfavorable direction at a rate exceeding 1% per year as worsening, and changing at a rate less than 1% per year as not changing. This year, for the first time, we introduce a similar method for assessing change in disparities using regression results. When a selected group's rate of change is at least 1% higher than the reference group's rate of change, we label the disparity as improving. When a selected group's rate of change is at least 1% lower than the reference group's rate of change, we label the disparity as worsening. When the difference in rates is less than 1%, we label the disparity as no change. I have several questions about these two paragraphs:

1. Does the NHQR report measure changes in terms of adverse outcomes?

YES, THE NHQR REPORTS CHANGES IN TERMS OF ADVERSE OUTCOMES. WEIGHTED LEAST SQUARE REGRESSION IS USED TO ESTIMATE THE SLOPE ACROSS AT LEAST 4 TIME POINTS. THE SLOPE IS COMPARED WITH NO CHANGE (ZERO SLOPE). TO INDICATE CHANGE, WE REQUIRE A SLOPE GREATER THAN 1% PER YEAR OR LESS THAN -1% PER YEAR AND A STATISTICALLY SIGNIFICANT DIFFERENCE FROM ZERO SLOPE AT $P < .10$,

2. Regarding the NHDR, are these rates of change based on adverse outcomes?

YES, THE NHDR EXAMINES RATES OF CHANGE BASED ON ADVERSE OUTCOMES USING THE SAME METHODS AS THE NHQR.

3. Let's say that a minority group has a rate of change of 3% and whites have a rate of change of 1.9% per year. Am I correct that that would be an improvement because 3% is more than 1 percentage point greater than 1.9%?

IF THE TWO RATES WERE CONVERGING AND THE 3% WAS DIFFERENT FROM 1.9% WITH $P < .10$, WE WOULD SAY THE DISPARITY HAD IMPROVED / GOTTEN SMALLER.

4. This question may be obviated by answers to the other. But I noticed that in the Priority Populations section of the 2010 report it is noted that one black-white disparity that was getting better was Female Medicare beneficiaries age 65 and over who reported ever being screened/preservation and

for osteoporosis with a bone mass or bone density measurement. In order to understand what that meant, I looked at the information in Table 10-1. And I set out the black and white figures for screening (Yes) and for not screening (No) for 2000 and 2008. I also set out the total percentage changes for Yes and No over the period, and yearly percent change for each group for each outcome. (I realize that the yearly change figures may differ from your regression derived figures, but I would not expect them to differ in a way that would affect my point here.)

Race	2008Yes	2000Yes	2008No	2000No	TotPercYesCh	TotPercNoCh	YearlyYesCh	YearlyNoCh
White	74.60%	36.00%	25.40%	64.00%	107.22%	60.31%	13.40%	7.54%
Black	47.40%	15.90%	52.60%	84.10%	198.11%	37.46%	24.76%	4.68%

As I read the figures in the table, if one looked at the favorable outcome (screening) one would see that the black rate of improvement exceeded the white rate of approval by well more than 1 percentage point per year. But if one examined the rate of improvement for not being screened, the white rate of improvement would be considerably larger than the black rate. I might add that the relative difference in favorable outcome decreased while the relative difference in the adverse outcome increased. So my basic question here is, if AHRQ is looking at the adverse outcome, why did it find the disparity to have decreased?

USING OUR CURRENT APPROACH, WE WOULD FOCUS ON THE ADVERSE EVENT, NOT BEING SCREENED. FROM OUR REGRESSIONS, THE WHITE SLOPE IS 4.6% PER YEAR WHILE THE BLACK SLOPE IS 3.9% PER YEAR. THIS DIFFERENCE IS < 1% PER YEAR, SO WE WOULD SAY THAT THE DISPARITY HAS NOT CHANGED OVER TIME. THIS IS DIFFERENT THAN THE METHOD USED IN THE 2010 REPORT.

5. I focused on 2010 because I was just trying to get a handle on the methodology. If there is any further change since, I would appreciate your letting me know about that. Thank you very much.

Best wishes,

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