

# **Examining the Potential Effects of Socioeconomic Factors on Medicare Star Ratings**

## **Technical Appendix to September 8, 2015 CMS Briefing**

### **1. What is the source of the data used for the analyses?**

The goal of the research was to assess whether Medicare Advantage (MA) or Part D (PDP) sponsors that enroll a disproportionate number of vulnerable beneficiaries are systematically disadvantaged by the Star Ratings. CMS used patient-level clinical data for measurement year 2012 that were used for the 2014 Medicare Star Ratings program and 2015 Quality Bonus Payments for MA contracts. The Medicare Beneficiary Database (MBD) was used to identify Medicare beneficiaries who were fully or partially dual eligible (DE) and/or received a low income subsidy (LIS) for prescription drugs in December 2012. (Partially DE included beneficiaries in the Medicare Savings Programs, which includes the Qualified Medicare Beneficiary Program, the Specified Low-Income Medicare Beneficiary Program, the Qualifying Individual Program, and the Qualified Disabled Working Individual Program.) A dichotomous variable (0/1) was constructed for each beneficiary to indicate their LIS/DE status, with a value of “1” indicating the beneficiary was deemed eligible for LIS or was dually eligible. The LIS/DE indicator is used as the measure of socioeconomic status (SES) in the analyses. To examine the association between disability status and contract performance, a beneficiary’s disability status as of December 2012 was also drawn from the MBD.

The analyses included all MA and PDP contracts (including SNPs and contracts in Puerto Rico) that were eligible for Star Ratings for the 2014 Star Rating year. The slide deck presents results only for the MA contracts that were eligible for Star Ratings in 2014. These analyses focused only on clinical measures used in the Star Rating program. Measures were excluded from evaluation if they were already adjusted for SES (n=10 measures), being retired or revised (n=6 measures), used only for Special Needs Plans (n=3 measures), addressed plan-level issues (n=12 measures; e.g., *Call Center – Foreign Language Interpreter and TTY Availability*), or under direct provider control and should not be affected by non-clinical characteristics (n=1 measure; *High Risk Medication*). Performance on each measure was the outcome of interest; measures were coded to indicate whether the Medicare beneficiary received the recommended care process or achieved the measured outcome (0=no, 1=yes).

### **2. How did you estimate the average within-contract disparity of being LIS/DE (or disabled) on the likelihood of receiving a recommended care process or achieving an outcome?**

The first analysis CMS presented in the slide deck identified the average within-contract disparity in performance associated with being LIS/DE (or disabled). To estimate the average within-contract LIS/DE disparity for each performance measure, a fixed-effects logistic regression model was fit to examine the association between the performance score and an

indicator of patient LIS/DE, including indicator variables for each MA and PDP contract to control for between-contract differences. The statistical model is represented as follows:

$$\text{logit}(p_{ij}) = \beta_0 + \beta_1 * \text{LIS/DE}_{ij} + \gamma_i \quad \text{Model 1}$$

Where: the  $j$  subscript refers to a beneficiary and the  $i$  subscript refers to a specific contract.

$p_{ij}$  refers to the probability that beneficiary  $j$  in contract  $i$  receives the care summarized by the performance measure;

$\text{LIS/DE}_{ij}$  is an indicator of whether beneficiary  $j$  from contract  $i$  is dually eligible or receives a low-income subsidy; and

$\gamma_i$  is the fixed effect for contract  $i$ .

The regression coefficient of interest is  $\beta_1$ , which captures the average within-contract patient LIS/DE disparity.

The results from the logistic regression are presented in Appendix A of this document and slides 24 and 25 of the slide deck. The odds ratios in slides 24-25 summarize the average within-contract LIS/DE disparity across all contracts while allowing for the existence of true differences in quality between contracts.

Using the measure *Breast Cancer Screening (BCS)* to illustrate, the average within-contract effect of LIS/DE can be used to estimate the probability of receiving BCS for a beneficiary in a given contract. The probability would be estimated from the logistic regression's intercept ( $\beta_0$  in Model 1) on the log-odds scale ( $\ln(2.63) = 0.97$  from Appendix A), the log-odds ratio for LIS/DE ( $\ln(0.69) = -0.37$ , where  $-0.37$  is the estimate of  $\beta_1$  in Model 1), and the log-odds ratio of the contract's fixed effect estimate (represented in Model 1 by  $\gamma_i$  for contract  $i$ ).

### 3. How should an odds ratio and the statistical significance be interpreted?

The odds ratios shown in slides 24 and 25 of the slide deck provide the magnitude and direction of the association. An odds ratio of less than 1.00 indicates a negative association of being LIS/DE or Disabled with performance. A negative association implies LIS/DE beneficiaries are less likely to have the recommended care or outcome compared to non-LIS/DE beneficiaries. An odds ratio of greater than 1.00 indicates a positive association of being LIS/DE or Disabled. A positive association implies LIS/DE beneficiaries are more likely to have the recommended care or outcome compared to non-LIS/DE beneficiaries.

For example, the average within-contract effect of LIS/DE on the *BCS* measure is an odds ratio of 0.69 ( $p < .001$ ), indicating the odds of a LIS/DE beneficiary receiving *BCS* are less likely than non-LIS/DE beneficiaries receiving *BCS* (i.e., a LIS/DE beneficiary receiving *BCS* is 69% of the odds of a non-LIS/DE beneficiary receiving *BCS*).

Because of the large number of beneficiaries included in these analyses, an odds ratio that is close to 1.00 (i.e., a small effect) might be statistically significant; however, small differences may not be practically important. An odds ratio of 0.99, for example, may be statistically significant, but in a practical sense represents a small effect and does not necessarily lead to the interpretation of a meaningful difference in outcomes between the two groups. For example, when we compared LIS/DE to non-LIS/DE beneficiaries for the measure *Medication Adherence for Diabetes Medications* and *Medication Adherence for Cholesterol*, the odds ratio was 0.94 and statistically significant at  $p < 0.001$ ; however, this difference is small. Large sample sizes can lead to statistically significant findings that are not necessarily clinically important, and thus, caution is required when interpreting the odds ratios.

#### 4. How do within-contract disparities vary across contracts?

While estimating the average within-contract LIS/DE disparity across all contracts is important, additional analyses are required to understand whether the within-contract disparity varies across contracts, whether most contracts have a negative within-contract disparity, and the range of within-contract disparities.

CMS examined the consistency and range of the LIS/DE disparity across contracts. For each contract, the proportion of beneficiaries receiving the measured clinical process or outcome for LIS/DE and non-LIS/DE beneficiaries was estimated separately, and the difference between the LIS/DE and non-LIS/DE performance rates per contract was calculated. To do this, we fit a linear mixed effects (LME) model that included LIS/DE as a predictor and random effects for contract and for the interaction of contract and LIS/DE. The statistical model is represented as follows:

$$y_{ij} = \gamma_{00} + v_{0i} + \gamma_{10} * LIS/DE_{ij} + v_{1i} * LIS/DE_{ij} + e_{ij} \quad \text{Model 2}$$

Where: the  $j$  subscript refers to a beneficiary and the  $i$  subscript refers to a specific contract.

$y_{ij}$  is the performance score for beneficiary  $j$  in contract  $i$ ;

$\gamma_{00}$  is an intercept term;

$v_{0i}$  is the random effect (intercept) for contract  $i$ ;

$\gamma_{10}$  is the coefficient of LIS/DE;

$v_{1i}$  is the random effect of LIS/DE for contract  $i$  (e.g., the interaction of LIS/DE and contract); and

$e_{ij}$  is the error term.

Contract-specific LIS/DE disparities were estimated using empirical best linear unbiased predictions (BLUPs). For contract  $i$ , the BLUP would be  $\gamma_{00} + v_{0i} + \gamma_{10} + v_{1i}$  for LIS/DE beneficiaries and  $\gamma_{00} + v_{0i}$  for non-LIS/DE beneficiaries, and the LIS/DE disparity for contract  $i$  is estimated as the difference, which is equal to  $\gamma_{10} + v_{1i}$ .

The figure on slide 30 of the slide deck displays the range of within-contract LIS/DE disparities for each measure, with the median and percentiles chosen to characterize the range of disparities across contracts. Slide 31 displays the range of within-contract disability disparities. The overall range of the within-contract LIS/DE disparities for a given measure is represented by the length of the blue horizontal line. The white rectangle represents the range of the middle 90% of within-contract disparities. The median of the contract-specific LIS/DE or Disability disparity represents the typical difference. The data used to create the figures on slides 30 and 31 of the slide deck are presented in Appendix B of this document. Appendix B includes additional descriptives to better understand the within-contract LIS/DE disparities.

## 5. What is the difference between the results shown on slides 24 and 30?

Slides 24 and 30 of the slide deck present different estimates. The differences presented on slide 30 summarize the range of contract disparities, having estimated the within-contract LIS/DE for each contract. It shows how contracts vary in their within-contract LIS/DE disparity, summarizing the LIS/DE disparities for each contract in terms of percentage point differences. The range of the within-contract LIS/DE disparities for a given measure is represented by the blue horizontal line. For measure *BCS*, the largest negative difference between LIS/DE and non-LIS/DE beneficiaries is -23 percentage points for one contract and the largest positive difference is 5 percentage points for another contract (right-hand side of the figure). The median of the contract-specific LIS/DE disparities for *BCS* is -8 percentage points and is denoted by a red square. Thus, most, but not all, contracts have a LIS/DE disparity for the *BCS* measure. In contrast, there are some measures for which every contract has a LIS/DE disparity - for example, all contract-specific estimates for the measure *Osteoporosis Management* are in the negative (gray) region of the figure on slide 30. In addition, there is one measure for which every contract has a positive LIS/DE disparity. All contract-specific estimates for the measure *Reducing the Risk of Falling* are in the positive (unshaded) region of the figure on slide 30.

In contrast, the odds ratios in slide 24 summarize the *average* within-contract LIS/DE disparity across all contracts. The average within-contract effect of LIS/DE can be used to estimate the probability of receiving *breast cancer screening* for a beneficiary in a given contract. The probability would be estimated from the logistic regression's intercept on the log-odds scale ( $0.97 = \ln(2.63)$  from Appendix A), the log-odds ratio for LIS/DE ( $\ln(0.69) = -0.37$ ), and the log-odds ratio for the contract fixed effect. Assuming there are  $N$  contracts, and the  $N^{\text{th}}$  contract is the hold-out category (reference category) for the contract fixed effects, the probability of receiving breast cancer screening by LIS/DE status is illustrated as follows:

When LIS/DE=1 (low SES), the probability of receiving *breast cancer screening* for contract N =  $\exp(0.97-0.37)/(1+\exp(0.97-0.37)) = 0.65$  or 65%.

When LIS/DE=0 (not low SES), the probability of receiving *breast cancer screening* for contract N =  $\exp(0.97)/(1+\exp(0.97)) = 0.73$  or 73%

The difference is then  $P_{\text{LIS/DE}} - P_{\text{non-LIS/DE}} = 65\% - 73\% = (-8\%)$

Thus, the *average* within-contract LIS/DE disparity across all contracts for BCS is (-8%).

## **6. On slide 34, why was the 2 percentage point difference chosen?**

To summarize the results, a criterion was applied to categorize the effect as positive, negative, or no effect. CMS applied a median rule of plus/minus 2 percentage points. The visuals allow the reader to apply his/her own criterion and determine the classification of the measures.

## **7. When will we see any potential changes to the Star Ratings?**

Our annual Request for Comments, to be released in November, will propose potential next steps related to adjustments for the Star Ratings.

## Appendix A

### Results to support slides 24, 25, 42-46

**Results from Logistic Regressions with Contract Fixed Effects: Results reported as odds ratios with confidence intervals; contract fixed effects not shown**

#### Breast Cancer Screening

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	1,551,514	1,551,514	1,551,514
C-statistic	0.639	0.641	0.644
Intercept Odds Ratio	2.63 ( 2.6 , 2.65 ) ***	2.71 ( 2.68 , 2.73 ) ***	2.89 ( 2.87 , 2.92 ) ***
DE/LIS Odds Ratio	0.69 ( 0.68 , 0.7 ) ***		0.75 ( 0.74 , 0.76 ) ***
Disabled Odds Ratio		0.72 ( 0.71 , 0.73 ) ***	0.75 ( 0.75 , 0.76 ) ***

#### Diabetes Care: Blood Sugar Controlled

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	262,987	262,987	262,987
C-statistic	0.704	0.708	0.710
Intercept Odds Ratio	3.35 ( 3.30 , 3.40 ) ***	3.46 ( 3.41 , 3.50 ) ***	3.72 ( 3.66 , 3.78 ) ***
DE/LIS Odds Ratio	0.68 ( 0.66 , 0.71 ) ***		0.75 ( 0.73 , 0.78 ) ***
Disabled Odds Ratio		0.63 ( 0.61 , 0.64 ) ***	0.65 ( 0.64 , 0.67 ) ***

#### Colorectal Cancer Screening

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	706,729	706,729	706,729
C-statistic	0.708	0.708	0.709
Intercept Odds Ratio	1.69 ( 1.67 , 1.71 ) ***	1.69 ( 1.67 , 1.70 ) ***	1.73 ( 1.71 , 1.75 ) ***
DE/LIS Odds Ratio	0.87 ( 0.85 , 0.88 ) ***		0.89 ( 0.87 , 0.91 ) ***
Disabled Odds Ratio		0.47 ( 0.42 , 0.52 ) ***	0.87 ( 0.86 , 0.88 ) ***

#### Osteoporosis Management in Women Who had a Fracture

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	132,624	132,624	132,624
C-statistic	0.729	0.729	0.731
Intercept Odds Ratio	0.29 ( 0.28 , 0.30 ) ***	0.28 ( 0.27 , 0.29 ) ***	0.30 ( 0.29 , 0.31 ) ***
DE/LIS Odds Ratio	0.71 ( 0.68 , 0.74 ) ***		0.71 ( 0.68 , 0.75 ) ***
Disabled Odds Ratio		0.56 ( 0.51 , 0.62 ) ***	0.56 ( 0.51 , 0.62 ) ***

**Results to support slides 24, 25, 42-46****Results from Logistic Regressions with Contract Fixed Effects: Results reported as odds ratios with confidence intervals; contract fixed effects not shown**

## Diabetes Care: Eye Exam

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	331,714	331,714	331,714
C-statistic	0.676	0.681	0.682
Intercept Odds Ratio	2.08 ( 2.06 , 2.11 ) ***	2.30 ( 2.27 , 2.32 ) ***	2.29 ( 2.26 , 2.32 ) ***
DE/LIS Odds Ratio	0.93 ( 0.91 , 0.95 ) ***		1.01 ( 0.98 , 1.03 )
Disabled Odds Ratio		0.68 ( 0.67 , 0.69 ) ***	0.68 ( 0.67 , 0.69 ) ***

## Annual Flu Vaccine

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	192,586	192,586	192,586
C-statistic	0.614	0.618	0.618
Intercept Odds Ratio	2.62 ( 2.59 , 2.66 ) ***	2.67 ( 2.64 , 2.7 ) ***	2.73 ( 2.69 , 2.77 ) ***
DE/LIS Odds Ratio	0.85 ( 0.82 , 0.88 ) ***		0.90 ( 0.87 , 0.94 ) ***
Disabled Odds Ratio		0.72 ( 0.7 , 0.74 ) ***	0.73 ( 0.71 , 0.75 ) ***

## Rheumatoid Arthritis Management

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	139,733	139,733	139,733
C-statistic	0.650	0.650	0.651
Intercept Odds Ratio	3.68 ( 3.59 , 3.78 ) ***	3.35 ( 3.27 , 3.44 ) ***	3.51 ( 3.42 , 3.61 ) ***
DE/LIS Odds Ratio	0.85 ( 0.81 , 0.88 ) ***		0.82 ( 0.79 , 0.85 ) ***
Disabled Odds Ratio		1.17 ( 1.14 , 1.21 ) ***	1.20 ( 1.16 , 1.24 ) ***

## Medication Adherence for Hypertension

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	5,354,008	5,354,008	5,354,008
C-statistic	0.588	0.592	0.593
Intercept Odds Ratio	3.69 ( 3.65 , 3.74 ) ***	3.7 ( 3.66 , 3.74 ) ***	3.84 ( 3.8 , 3.89 ) ***
DE/LIS Odds Ratio	0.86 ( 0.85 , 0.86 ) ***		0.9 ( 0.9 , 0.91 ) ***
Disabled Odds Ratio		0.72 ( 0.72 , 0.73 ) ***	0.74 ( 0.73 , 0.74 ) ***

**Results to support slides 24, 25, 42-46****Results from Logistic Regressions with Contract Fixed Effects: Results reported as odds ratios with confidence intervals; contract fixed effects not shown**

## Plan All-Cause Readmission (reverse coded)

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	1,629,416		
C-statistic	0.655		
Intercept Odds Ratio	1.7 ( 1.67 , 1.73 ) ***		
DE/LIS Odds Ratio	0.87 ( 0.85 , 0.88 ) ***		
Disabled Odds Ratio			

## Diabetes Care: Kidney Disease Monitoring

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	304,937	304,937	304,937
C-statistic	0.663	0.670	0.670
Intercept Odds Ratio	9.59 ( 9.39 , 9.79 ) ***	10.60 ( 10.39 , 10.81 ) ***	10.57 ( 10.34 , 10.82 ) ***
DE/LIS Odds Ratio	0.93 ( 0.90 , 0.97 ) ***		1.01 ( 0.97 , 1.05 )
Disabled Odds Ratio		0.69 ( 0.67 , 0.71 ) ***	0.69 ( 0.67 , 0.71 ) ***

## Monitoring Physical Activity

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	319,604	319,604	319,604
C-statistic	0.559	0.560	0.560
Intercept Odds Ratio	0.98 ( 0.97 , 0.99 ) **	0.97 ( 0.97 , 0.98 ) ***	0.98 ( 0.97 , 0.99 ) ***
DE/LIS Odds Ratio	0.98 ( 0.96 , 1.01 )		0.98 ( 0.95 , 1.01 )
Disabled Odds Ratio		1.34 ( 1.27 , 1.42 ) ***	1.34 ( 1.27 , 1.42 ) ***

## Medication Adherence for Diabetes Medications

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	1,746,597	1,746,597	1,746,597
C-statistic	0.586	0.591	0.591
Intercept Odds Ratio	3.28 ( 3.23 , 3.32 ) ***	3.41 ( 3.36 , 3.46 ) ***	3.42 ( 3.37 , 3.47 ) ***
DE/LIS Odds Ratio	0.94 ( 0.93 , 0.95 ) ***		0.99 ( 0.98 , 1 ) **
Disabled Odds Ratio		0.75 ( 0.74 , 0.75 ) ***	0.75 ( 0.74 , 0.75 ) ***



**Results to support slides 24, 25, 42-46****Results from Logistic Regressions with Contract Fixed Effects: Results reported as odds ratios with confidence intervals; contract fixed effects not shown**

## Controlling High Blood Pressure

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	174,792	174,792	174,792
C-statistic	0.616	0.616	0.616
Intercept Odds Ratio	1.71 ( 1.68 , 1.73 ) ***	1.70 ( 1.68 , 1.72 ) ***	1.70 ( 1.68 , 1.73 ) ***
DE/LIS Odds Ratio	0.99 ( 0.96 , 1.03 )		0.99 ( 0.96 , 1.02 )
Disabled Odds Ratio		1.02 ( 0.99 , 1.05 )	1.02 ( 0.99 , 1.05 )

## Medication Adherence for Cholesterol

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	5,343,136	5,343,136	5,343,136
C-statistic	0.603	0.600	0.600
Intercept Odds Ratio	2.79 ( 2.76 , 2.82 ) ***	2.85 ( 2.82 , 2.88 ) ***	2.87 ( 2.84 , 2.91 ) ***
DE/LIS Odds Ratio	0.94 ( 0.93 , 0.95 ) ***		0.98 ( 0.97 , 0.98 ) ***
Disabled Odds Ratio		0.79 ( 0.79 , 0.8 ) ***	0.79 ( 0.79 , 0.8 ) ***

## Adult BMI Assessment

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	513,776	513,776	513,776
C-statistic	0.841	0.841	0.841
Intercept Odds Ratio	4.78 ( 4.68 , 4.88 ) ***	5.00 ( 4.90 , 5.10 ) ***	4.88 ( 4.77 , 4.98 ) ***
DE/LIS Odds Ratio	1.10 ( 1.06 , 1.14 ) ***		1.12 ( 1.09 , 1.16 ) ***
Disabled Odds Ratio		0.93 ( 0.91 , 0.96 ) ***	0.92 ( 0.89 , 0.94 ) ***

## Reducing the Risk of Falling

Model	DE/LIS + contract FE	disability + contract FE	DE/LIS+disability + contract FE
N	127,151	127,151	127,151
C-statistic	0.599	0.590	0.600
Intercept Odds Ratio	1.35 ( 1.33 , 1.37 ) ***	1.53 ( 1.51 , 1.55 ) ***	1.34 ( 1.32 , 1.36 ) ***
DE/LIS Odds Ratio	1.67 ( 1.6 , 1.74 ) ***		1.67 ( 1.61 , 1.74 ) ***
Disabled Odds Ratio		1.32 ( 1.22 , 1.42 ) ***	1.33 ( 1.23 , 1.44 ) ***

## Appendix B

**Data to support slide 30: "Variation Across MA Contracts in Within-Contract LIS/DE Disparity"**

**Distribution of BLUPS + LIS/DE fixed effects**

MA Contracts	Min	P2.5	P5	P10	P25	P50	P75	P90	P95	P97.5	Max	Mean	Std
Adult BMI Assessment	-0.133	-0.074	-0.061	-0.042	-0.016	0.009	0.033	0.057	0.082	0.098	0.231	0.009	0.044
Rheumatoid Arthritis Management	-0.098	-0.056	-0.049	-0.046	-0.039	-0.034	-0.030	-0.024	-0.020	-0.017	-0.008	-0.035	0.010
Breast Cancer Screening	-0.236	-0.176	-0.155	-0.133	-0.107	-0.085	-0.062	-0.033	-0.017	-0.001	0.053	-0.085	0.040
Controlling High Blood Pressure	-0.028	-0.020	-0.017	-0.014	-0.009	-0.005	-0.002	0.003	0.005	0.008	0.028	-0.005	0.007
Diabetes Care: Blood Sugar Controlled	-0.119	-0.102	-0.095	-0.085	-0.074	-0.064	-0.054	-0.042	-0.035	-0.028	0.006	-0.064	0.017
Diabetes Care: Eye Exam	-0.153	-0.115	-0.103	-0.089	-0.070	-0.045	-0.023	-0.001	0.019	0.040	0.125	-0.045	0.038
Diabetes Care: Kidney Disease Monitoring	-0.057	-0.030	-0.026	-0.022	-0.013	-0.006	0.001	0.007	0.012	0.016	0.033	-0.006	0.012
Colorectal Cancer Screening	-0.179	-0.138	-0.128	-0.111	-0.085	-0.061	-0.038	-0.017	0.007	0.018	0.095	-0.061	0.039
Osteoporosis Management in Women Who had a Fracture	-0.077	-0.067	-0.062	-0.060	-0.058	-0.056	-0.054	-0.050	-0.048	-0.046	-0.029	-0.056	0.005
Plan All-Cause Readmission (reverse coded)	-0.036	-0.024	-0.022	-0.020	-0.017	-0.015	-0.013	-0.010	-0.009	-0.006	-0.003	-0.015	0.004
Annual Flu Vaccine	-0.132	-0.094	-0.080	-0.070	-0.052	-0.038	-0.023	-0.011	-0.003	0.007	0.045	-0.039	0.024
Monitoring Physical Activity	-0.092	-0.052	-0.045	-0.038	-0.024	-0.006	0.010	0.027	0.041	0.049	0.099	-0.006	0.026
Reducing the Risk of Falling	0.108	0.119	0.121	0.123	0.127	0.131	0.134	0.138	0.142	0.145	0.155	0.131	0.006
Medication Adherence for Diabetes Medications	-0.066	-0.040	-0.036	-0.027	-0.017	-0.006	0.004	0.014	0.019	0.028	0.081	-0.006	0.018
Medication Adherence for Hypertension	-0.081	-0.060	-0.054	-0.049	-0.037	-0.023	-0.012	-0.001	0.005	0.014	0.102	-0.024	0.020
Medication Adherence for Cholesterol	-0.095	-0.052	-0.043	-0.033	-0.017	-0.002	0.013	0.024	0.033	0.045	0.112	-0.002	0.024

**Data to support slide 31: "Variation Across MA Contracts in Within-Contract Disability Disparity"****Distribution of BLUPS + disability fixed effects**

<b>MA Contracts</b>	<b>Min</b>	<b>P2.5</b>	<b>P5</b>	<b>P10</b>	<b>P25</b>	<b>P50</b>	<b>P75</b>	<b>P90</b>	<b>P95</b>	<b>P97.5</b>	<b>Max</b>	<b>Mean</b>	<b>Std</b>
Adult BMI Assessment	-0.103	-0.071	-0.058	-0.044	-0.025	-0.006	0.015	0.034	0.047	0.061	0.097	-0.005	0.031
Rheumatoid Arthritis Management	-0.034	-0.010	-0.002	0.005	0.016	0.023	0.030	0.038	0.048	0.056	0.104	0.023	0.016
Breast Cancer Screening	-0.168	-0.117	-0.108	-0.097	-0.075	-0.059	-0.041	-0.027	-0.015	-0.009	0.036	-0.060	0.028
Controlling High Blood Pressure	-0.029	-0.019	-0.015	-0.011	-0.004	0.002	0.009	0.015	0.018	0.021	0.045	0.002	0.010
Diabetes Care: Blood Sugar Controlled	-0.161	-0.134	-0.123	-0.114	-0.096	-0.080	-0.065	-0.050	-0.043	-0.035	0.002	-0.081	0.025
Diabetes Care: Eye Exam	-0.169	-0.137	-0.130	-0.122	-0.107	-0.093	-0.077	-0.062	-0.055	-0.049	-0.011	-0.092	0.023
Diabetes Care: Kidney Disease Monitoring	-0.088	-0.064	-0.059	-0.052	-0.042	-0.033	-0.025	-0.018	-0.015	-0.013	-0.006	-0.034	0.013
Colorectal Cancer Screening	-0.126	-0.097	-0.086	-0.077	-0.058	-0.040	-0.022	-0.004	0.005	0.017	0.048	-0.040	0.028
Osteoporosis Management in Women Who had a Fracture	-0.112	-0.104	-0.102	-0.100	-0.096	-0.093	-0.090	-0.085	-0.079	-0.076	-0.067	-0.092	0.006
Annual Flu Vaccine	-0.105	-0.090	-0.087	-0.083	-0.078	-0.073	-0.067	-0.061	-0.059	-0.055	-0.044	-0.073	0.009
Monitoring Physical Activity	-0.002	0.027	0.035	0.044	0.057	0.072	0.084	0.097	0.103	0.110	0.134	0.071	0.021
Reducing the Risk of Falling	0.000	0.028	0.035	0.045	0.055	0.066	0.074	0.083	0.088	0.095	0.114	0.065	0.016
Medication Adherence for Diabetes Medications	-0.093	-0.077	-0.074	-0.069	-0.064	-0.060	-0.056	-0.050	-0.045	-0.042	-0.023	-0.059	0.008
Medication Adherence for Hypertension	-0.106	-0.083	-0.078	-0.073	-0.065	-0.059	-0.055	-0.048	-0.043	-0.039	-0.023	-0.060	0.010
Medication Adherence for Cholesterol	-0.099	-0.073	-0.068	-0.063	-0.054	-0.045	-0.038	-0.029	-0.023	-0.016	0.009	-0.046	0.014