
RISE RAPS-EDS Collaboration Research Project Final Report

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RISE RAPS-EDS COLLABORATION RESEARCH PROJECT FINAL REPORT

Avalere analyzed data from eight Medicare Advantage Organizations (MAOs) representing 1.1 million beneficiaries in more than 30 unique plans operating across the country to understand the impact of shifting the determination of plan risk scores from the traditional Risk Adjustment Processing System (RAPS) to the new Encounter Data System (EDS).

The Centers for Medicare & Medicaid Services (CMS) originally expressed the intention to transition gradually to EDS-based payments, starting with 10 percent of the payment based on EDS scoring in 2016, increasing to 25 percent in 2017 and 50 percent in 2018.¹ In spite of recent actions taken by CMS to improve the EDS submission process, a new Government Accountability Office (GAO) report documents numerous problems MA plans have had in submitting data and receiving reliable edits from the agency.² In recognition of the ongoing operational challenges and other concerns about the accuracy of EDS, CMS recently proposed to maintain the 2017 blend in 2018.³

CMS has said EDS should capture the same diagnoses identified in RAPS. However, we found that this transition will significantly reduce the identification of diagnoses used to calculate the risk scores that reflect the disease burden of the plans membership. Average risk scores resulting from the EDS process were 26 percent lower in the 2015 payment year (based on 2014 claims data) and 16 percent lower in the 2016 payment year (based on 2015 claims data) compared to RAPS. The risk score differences ranged from 14 to 30 percent lower across all age groups, but the adverse impact on the high cost, high need younger disabled population was significantly greater, ranging from 25 to 30 percent. Average risk scores of dual eligible members were also significantly lower compared to non-duals. The lower risk scores were the result of up to 40 percent fewer Hierarchical Condition Category (HCC) diagnoses identified in EDS compared to RAPS.

These risk score differences will put significant downward pressure on MAOs and may adversely impact the 18 million beneficiaries they serve. As an example, using an \$800 bid rate, if there had been a full transition from RAPS to EDS in 2016, this would equate to an average reduction of 16.1 percent in per-member per-month (PMPM) payment rates, representing a decrease of \$260.4 million per year for the average plan in our study. A 75/25 blend would have reduced payments by \$63.8 million, and the 90/10 blend would have reduced payments by \$25.2 million per year for the same average plan in our study.

An executive summary of the findings was released on January 23, 2017 [here](#).⁴ This full report includes additional analyses and supplemental information.

BACKGROUND

CMS uses a risk adjustment process to modify Medicare Advantage (MA) plan payments to better reflect the relative risk of each plan's enrollees. Payments to each MA plan are modified based on risk scores that reflect enrollees' health status and demographic characteristics derived from member claims data. MA plans are currently transitioning from the traditional Risk Adjustment Processing System (RAPS)—where risk adjustment filter rules are applied by health plans—to the new Encounter Data System (EDS)—where Medicare Advantage Organizations (MAOs) submit their members' claims and CMS applies the filtering logic.

The EDS is intended to be revenue and budget neutral because the change in format to the encounter data collection process was expected to result in the same risk scoring.⁵ However, the two approaches involve very different levels of information in their respective processes. The RAPS system involves only five necessary data elements (dates of service, provider type, diagnosis code and beneficiary Health Insurance Claim (HIC) number), while the EDS system utilizes all elements from the claims (i.e., HIPAA standard 5010 format 837).

The Centers for Medicare & Medicaid Services (CMS) originally expressed the intention to transition gradually to EDS-based payments, starting with 10 percent of the payment based on EDS scoring in 2016, increasing to 25 percent in 2017 and 50 percent in 2018.^{1,6} However, in recognition of the ongoing operational challenges and other concerns about the accuracy of EDS, CMS recently proposed to maintain the 2017 blend in 2018.³

Plans are concerned that the continued transition to EDS will lead to lower risk scores, which is inconsistent with the agency's intent. While CMS made changes to the EDS logic in 2016 to correct some identified issues, the 2016 risk scores analyzed in this study demonstrate that a significant difference between RAPS and EDS scoring still exists (16 percent lower). MAOs seek a solution where RAPS and EDS submissions are in complete alignment, ensuring the full risk adjustment payment from CMS without loss attributed solely to system changes.

OBJECTIVE

The goal of this research was to test the risk score neutrality theory of the transition from RAPS to EDS using sample data from nationally representative MAOs. The study aimed to evaluate the risk score and financial impact of the transition by comparing results reported back to plans from running the same set of claims data through the RAPS process to results from the EDS process.

METHODOLOGY

Eight MA health plans submitted their 2014 and 2015 claims to CMS and provided Inovalon/Avalere with the results from the two sources of data used for risk adjustment for the 2015 and 2016 payment years. We received (1) the RAPS Return files that inform plans of the disposition of diagnosis clusters submitted to CMS; and (2) the MAO-004

reports that inform plans of risk adjustment eligible diagnoses submitted to the EDS. Avalere researchers aggregated and analyzed results from the RAPS Return versus MAO-004 files, and compared resulting risk scores and estimated payment impact. Risk score differences were investigated for the sample as a whole, as well as subset analyses examining differences by age, region, dual eligible status and across plans. Finally, we compared the most common HCCs identified using RAPS to those identified with the new EDS.

RESULTS

Member Characteristics

The MA plan and study population characteristics are shown in Table 1. The eight participating health plans ranged in size from small (5,200 members) to large (409,000 members) in 2015 and were similar size in 2014 (see Appendix 1). The study analyzed a large representative sample that included 1.1 million Medicare beneficiaries in each year, with members represented from all 50 states. We used the same plans in 2014 and 2015 so the composition of plans in the study was consistent across the two years. The distribution of the study population by gender and age was also stable from 2014 to 2015. Thus, any changes in risk scores observed over this period are not attributable to shifts in demographics of participating plan memberships or to inclusion of different plans.

To assess the comparability of the study sample to the national MA population, Table 1 also shows the corresponding distributions for all MA plans nationwide. Gender and age distributions are highly similar to MA plans as a whole, but the West Census Region is underrepresented in our sample. The percent of dual eligible members is slightly higher in the study sample than in the nation as a whole, but this difference is negligible.

Table 1: Study Population Plan and Member Characteristics

	2014	2015	National MA (Percentage Only) ^{7,8}
Plan & Member Characteristics			
Number of Plans (H-Contracts):	8 (36)	8 (33)	-
Number of Members: Total	1,078,000	1,116,000	-
Mean	135,000	140,000	-
Range	5,500 - 408,000	5,200 - 409,000	-
Gender: N (%)			
Male	465,000 (43.2%)	482,800 (43.3%)	44%
Female	613,000 (56.8%)	633,300 (56.7%)	56%

Age in years: N (%)			
< 65	160,200 (14.9%)	178,200 (16.0%)	14%
65-69	208,000 (19.3%)	254,700 (22.8%)	22%
70-74	264,400 (24.5%)	268,000 (24.0%)	23%
75-79	192,000 (17.8%)	187,800 (16.8%)	17%
80 and over	253,400 (23.5%)	227,300 (20.4%)	24%
Census Region: N (%)			
Midwest	331,900 (30.7%)	360,500 (33.3%)	20%
Northeast	280,400 (25.9%)	290,400 (26.8%)	19%
South	429,700 (39.7%)	460,500 (42.6%)	33%
West	40,400 (3.7%)	6,700 (0.6%)	24%
Dual Eligible: N (%)			
Non-Duals	789,500 (73.2%)	816,700 (73.2%)	82%
Duals	288,700 (26.8%)	299,400 (26.8%)	18%

Risk Scores

Average risk scores from EDS were significantly lower compared to RAPS (Table 2). The EDS average risk score was 26 percent lower (0.86 versus 1.16) than the RAPS risk score in the 2015 payment year, and 16 percent lower (1.01 versus 1.20) in the 2016 payment year. The smaller difference between EDS and RAPS risk scores in 2016 can be attributed in part to the corrections CMS made to the EDS logic by improving the MAO-004 reports (e.g., fixing excluded reason for visit codes on header records, assuring valid HIC numbers, linking diagnoses from chart reviews to encounter records), and in part to plans taking actions to address errors identified in their claims data and EDS submissions, but the gap in risk scores from the two systems remains significant.

Table 2: RAPS and EDS—Risk Score Summary

	2015 Payment Year (2014 Dates of Service)	2016 Payment Year (2015 Dates of Service)
Average Risk Score: Mean (Range)		
100% RAPS	1.16 (1.00 - 1.74)	1.20 (0.98 - 1.73)
100% EDS	0.86 (0.41 - 1.10)	1.01 (0.88 - 1.46)
90% / 10% Blend	1.13 (0.95 - 1.68)	1.18 (0.97 - 1.70)
75% / 25% Blend	1.09 (0.86 - 1.58)	1.16 (0.95 - 1.66)
100% RAPS versus 100% EDS		
Difference: Mean (Range)	0.30 (0.12 - 0.64)	0.19 (0.02 - 0.39)

% Reduction from 100% RAPS	25.9% (10.6% - 59.4%)	15.8% (1.8% - 28.3%)
100% RAPS versus 90% / 10% Blend		
Difference: Mean (Range)	0.03 (0.01 - 0.06)	0.02 (0.00 - 0.04)
% Reduction from 100% RAPS	2.6% (0.9% - 5.9%)	1.7% (0.0% - 2.9%)
100% RAPS versus 75% / 25% Blend		
Difference: Mean (Range)	0.07 (0.03 - 0.16)	0.04 (0.00 - 0.09)
% Reduction from 100% RAPS	6.0% (2.7% - 14.9%)	3.3% (0.0% - 6.5%)

Figure 1 graphically represents the average risk scores for the 2016 payment year (2015 dates of service) by health plan and overall based on 100 percent RAPS and 100 percent EDS. Though individual plans experienced reductions in average risk scores ranging from 2 percent to 28 percent, it is apparent that the 16 percent lower risk scores on average observed in the overall sample is not due to just one or two large plans and that all plans are impacted regardless of size. (See Appendix 2 for 2015 payment year data which is not displayed here because the results were highly similar).

Figure 1: RAPS and EDS—Risk Scores by Health Plan and Overall

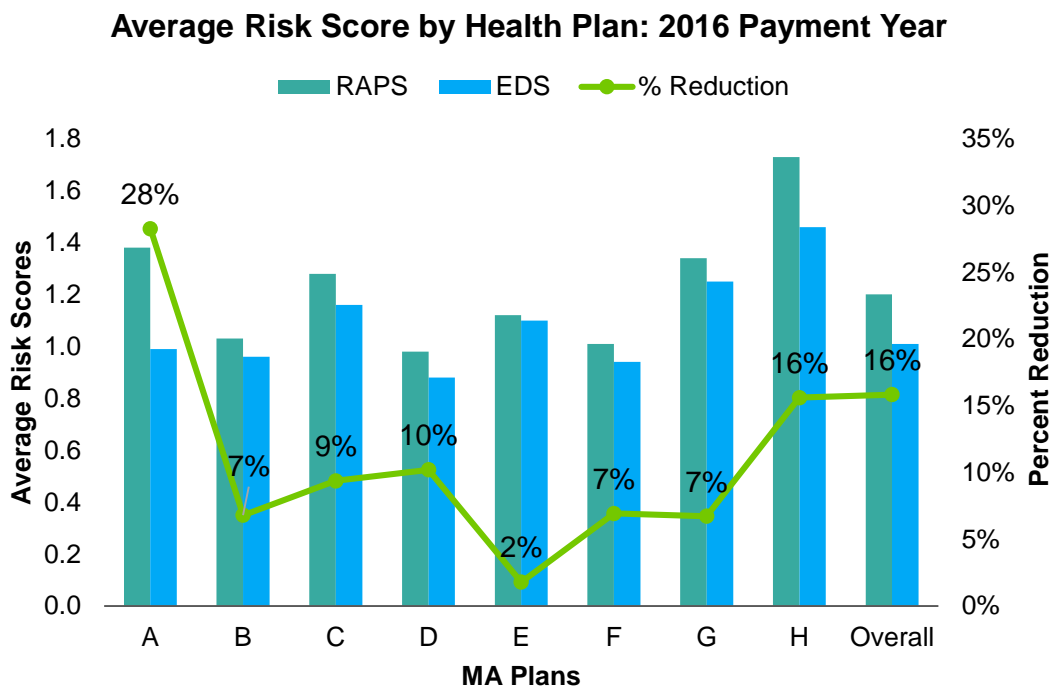


Figure 2 displays the average risk scores by age group of the beneficiaries. Average risk scores are shown for 100 percent RAPS versus 100 percent EDS (left axis). The line represents the percent difference between RAPS and EDS for each age group (right axis). While all age groups are impacted significantly, we see that the impact on risk scores of the high cost, high need younger disabled MA beneficiaries is greater than for those age 65+.

Figure 2: RAPS and EDS—Risk Scores by Member Age

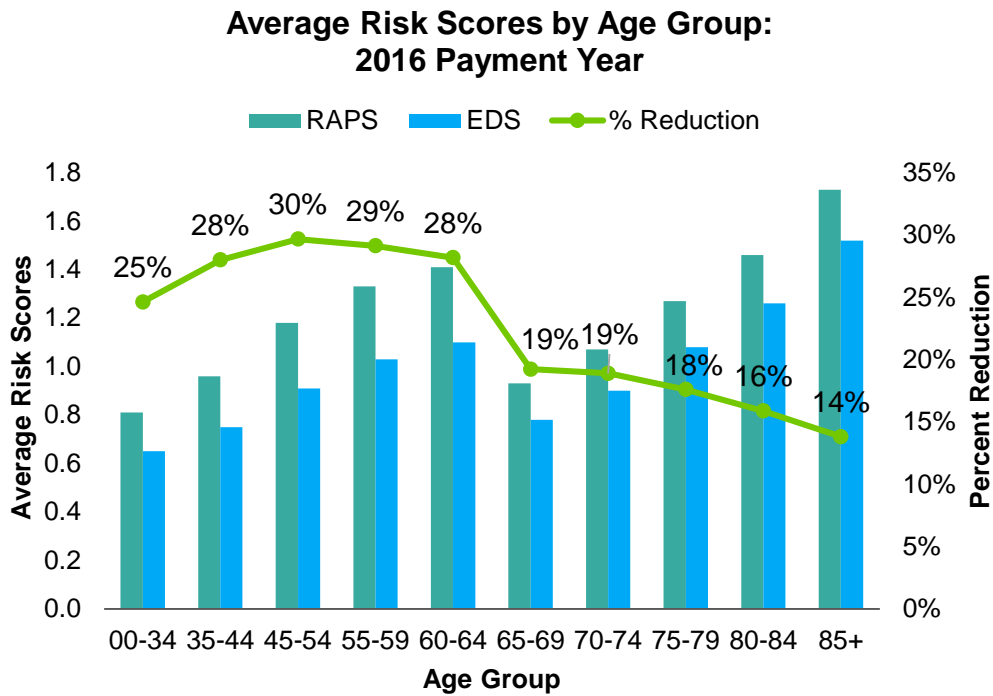


Figure 3 displays average risk scores by Census Region. The observed impact of EDS appears to be significantly greater in the South with 24 percent lower risk scores on average compared to the Northeast and Midwest. The risk score impact is lowest in the West but, as noted above, the sample is underrepresented in that region so the evidence is not conclusive for that region.

Figure 3: RAPS and EDS—Risk Scores by Census Region

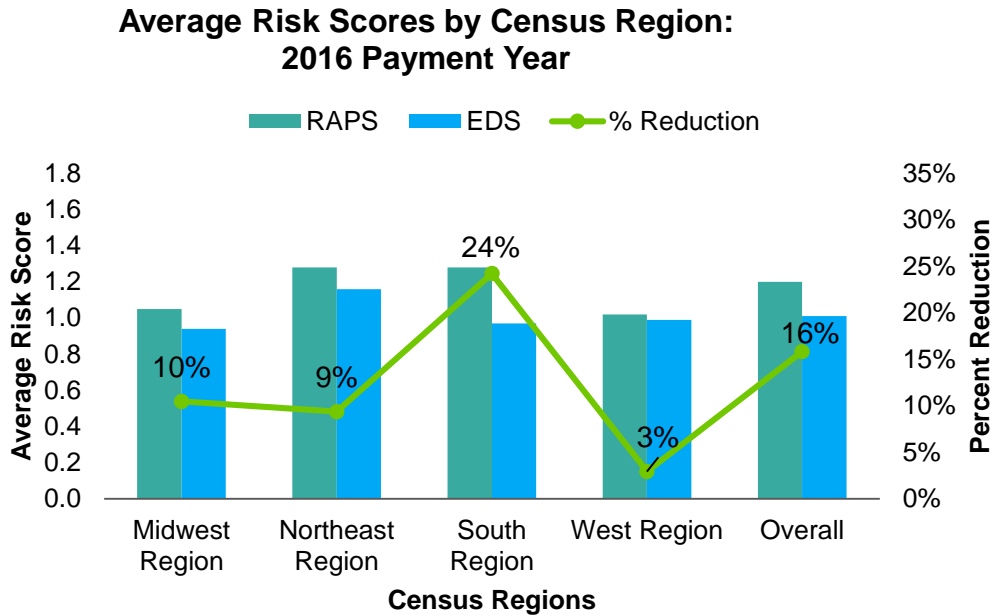
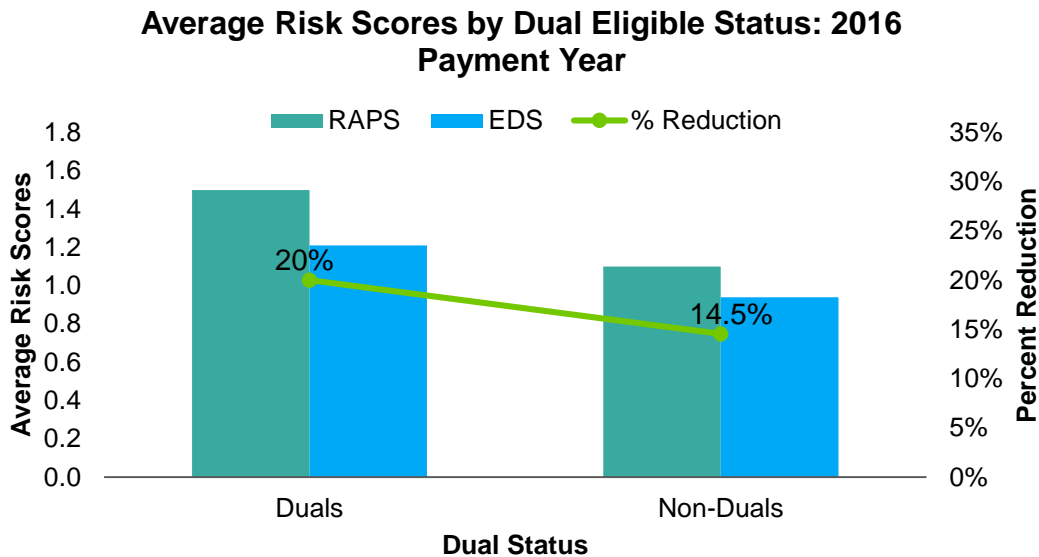


Figure 4 displays average risk scores by dual eligible status of the member. Although dual eligible beneficiaries have higher risk scores than non-duals under both systems, the percent reduction in average risk scores for dual eligible beneficiaries is significantly higher than the reduction for non-duals. This indicates that dual eligible members with lower incomes and more complex conditions on average are more adversely affected by the transition to EDS.

Figure 4: RAPS and EDS—Risk Scores by Dual Eligible Status



Financial Impact

The potential estimated impact on per-member per-month (PMPM) revenue is significant based on our sample of plans and MA beneficiaries (Table 3). For demonstration purposes, we assumed a default bid rate of \$800 PMPM (risk score = 1.0). The average payment rate for the 2016 payment year was \$963 based on 100 percent RAPS. It is only slightly lower with the 90/10 blend (\$948 reduction), \$925 applying the 75/25 blend, and \$809 with a full transition to EDS. This represents a 16 percent reduction in risk adjusted payments in 2016 based on a 100 percent shift to EDS, a 1.6 percent reduction based on the proposed 90/10 blended rate, and a 4.0 percent reduction based on the 75/25 blended rate,

To demonstrate the potential financial impact using the average study plan of 140,000 members in 2015 and the PMPM difference of \$155 based on a 100 percent shift to EDS, a full transition to EDS would result in a decrease of \$260.4 million per year in risk adjusted funds for the average plan. Applying the 90/10 blend, the difference translates to a decrease of \$25.2 million per year, and applying the 75/25 blend, the decrease is \$68.3 million for the average plan in the study.

Table 3: RAPS and EDS—Financial Impact Summary

	2016 Payment Year (2015 Dates of Service)
Financial Impact: PMPM; Mean (Range)	
100% RAPS	\$963 (\$781 - \$1,383)
100% EDS	\$809 (\$700 - \$1,167)
90% / 10% Blend	\$948 (\$773 - \$1,361)
75% / 25% Blend	\$925 (\$761 - \$1,329)
100% RAPS versus 100% EDS	
Difference: Mean (Range)	\$155 (\$18 - \$310)
% Reduction: from 100% RAPS	16.1%
100% RAPS versus 90% / 10% Blend	
Difference: Mean (Range)	\$15 (\$2 - \$31)
% Reduction: from 100% RAPS	1.6%
100% RAPS versus 75% / 25% Blend	
Difference: Mean (Range)	\$38 (\$5 - \$78)
% Reduction: from 100% RAPS	4.0%

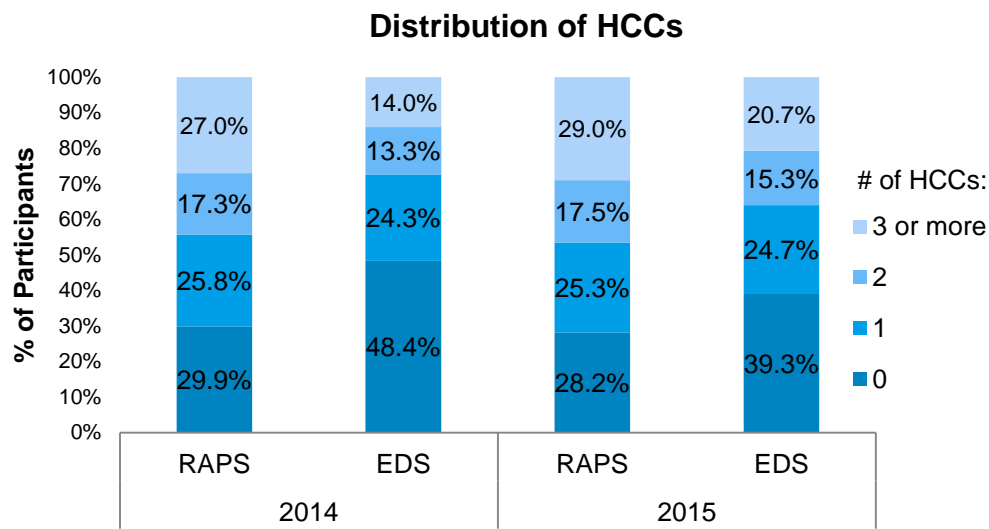
Heirarchical Chronic Conditions (HCCs)

A difference in risk scores implies either a difference in the total number of chronic conditions identified based on HCCs, a difference in which specific HCCs were identified (because HCCs have different weights and therefore make differential contributions to the risk score), or a combination of both. In general, our findings did not reveal any significant differences in which individual HCCs were identified for scoring. Rather, the data suggest there was difference in the overall number of HCCs identified and accepted.

Figure 5 shows the percent of members by the total number of HCCs identified based on the two scoring systems. RAPS HCC counts are consistent across the two study years, with 28-30 percent of members with no HCCs identified and about the same proportion of members with three or more HCCs. In contrast, EDS results in almost half the members with no HCCs identified in 2014, and more than 39 percent with no HCCS in 2015.

We also evaluated the top ten HCCs and their frequency of occurrence for both RAPS and EDS. The frequency of each of the top ten HCCs was consistently lower in EDS than in RAPS. On average, the most frequent HCCs were identified in approximately 12 percent of the members based on RAPS in both years. However, when assessed using EDS, the average prevalence was only 6.9 percent based on 2014 data and 9.2 percent based on 2015 data after CMS and health plan corrective actions (see Table 4 in Appendix 2).

Figure 5: RAPS and EDS—Distribution of HCCs per Member



In summary, up to 40 percent fewer HCCs were identified on average by EDS compared to RAPS using a large representative sample of MAO claims data for the 2015 and 2016 payment years. This difference results in significantly lower risk scores and lower risk adjusted payment rates using EDS compared to RAPS.

CONCLUSION

The transition to calculating risk scores based on plan encounter data submissions was projected to be revenue neutral to Medicare Advantage plans. A recent GAO study documented numerous technical difficulties experienced by plans in submitting their data and receiving accurate and actionable reports from the agency to correct the problems, and CMS has now proposed to slow the phase in to EDS, maintaining the blend at 75 percent RAPS and 25 percent EDS in 2017 and 2018.

This report shows that a continued transition to an encounter data system is likely to have significant impact on Medicare Advantage plan risk scores and risk adjusted payments. Risk scores and reimbursement rates that do not reflect the full resource needs of the population could influence plans' benefit design decisions and ultimately adversely impact the most high need, high cost beneficiaries who are younger, disabled, and dual eligible.

Until increased transparency in EDS reporting is provided and rigorous measures are taken to evaluate and resolve the differences, the continued transition to an encounter data-based system will have a significant adverse impact on the Medicare Advantage program and the beneficiaries served by the plans.

This project represents a collaboration between RISE, industry health plan partners, Inovalon and Avalere.

REFERENCES

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2. GAO-17-223 (January 2017). (<http://www.gao.gov/assets/690/682145.pdf>)
3. CMS Advance Notice and Draft Call Letter, released February 1, 2017 accessed at (<https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2017-Fact-Sheet-items/2017-02-01.html>) on February 19, 2017
4. Impact of Medicare Advantage Data Submission System on Risk Scores, (<http://avalere.com/expertise/managed-care/insights/impact-of-medicare-advantage-data-submission-system-on-risk-scores>)
5. See for example GAO-17-223, page 2, “CMS does not expect the diagnoses in MA encounter data to differ from those in RAPS.”
6. HPMS memo from Dec 29th, 2016
7. Centers for Medicare & Medicaid Services (2013). Medicare Current Beneficiary Survey (MCBS): <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/index.html> Accessed January 13, 2017.
8. Omitted US Territory/Unknown Census Regions from benchmark data, so percentages will not sum to 100 percent.

APPENDIX 1: STUDY PARTICIPANTS

	2014	2015
MA Plans		
Blue Cross Blue Shield of Michigan	284,000	305,000
Blue Cross Blue Shield of Minnesota	5,500	5,200
Blue Cross Blue Shield of North Carolina	105,000	92,000
Blue Care Network	53,000	62,000
Cigna	408,000	409,000
Gateway Health Plan	45,000	51,000
Geisinger Health System	63,000	71,000
Healthfirst	115,000	121,000
Total Number of Beneficiaries	1,078,000	1,116,000

APPENDIX 2: 2015 PAYMENT YEAR—TABLES AND FIGURES*

*Table and figure numbers are the same as the corresponding data in the body of the report

Figure 1: RAPS and EDS—Risk Scores by Health Plan and Overall

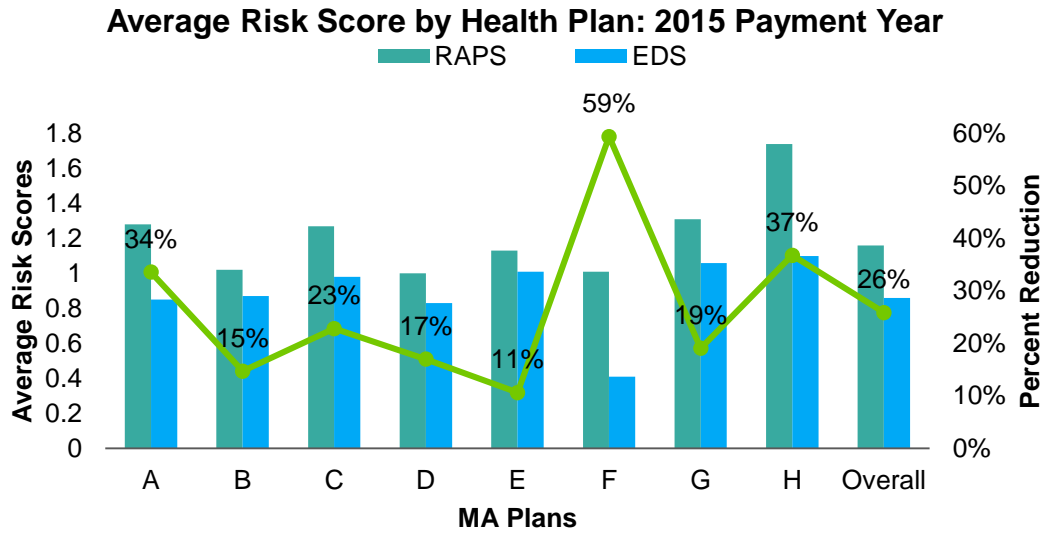


Figure 2: RAPS and EDS—Risk Scores by Member Age

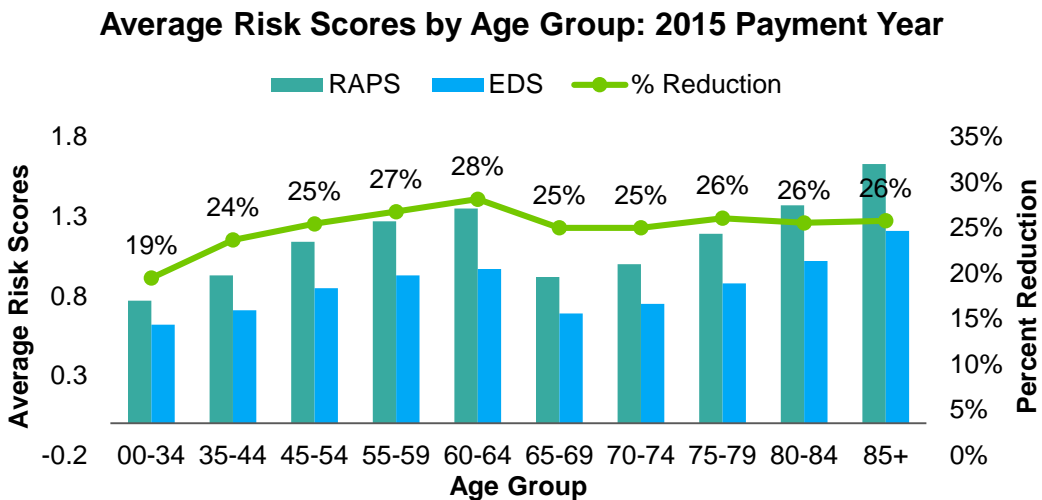


Figure 3: RAPS and EDS—Risk Scores by Census Region

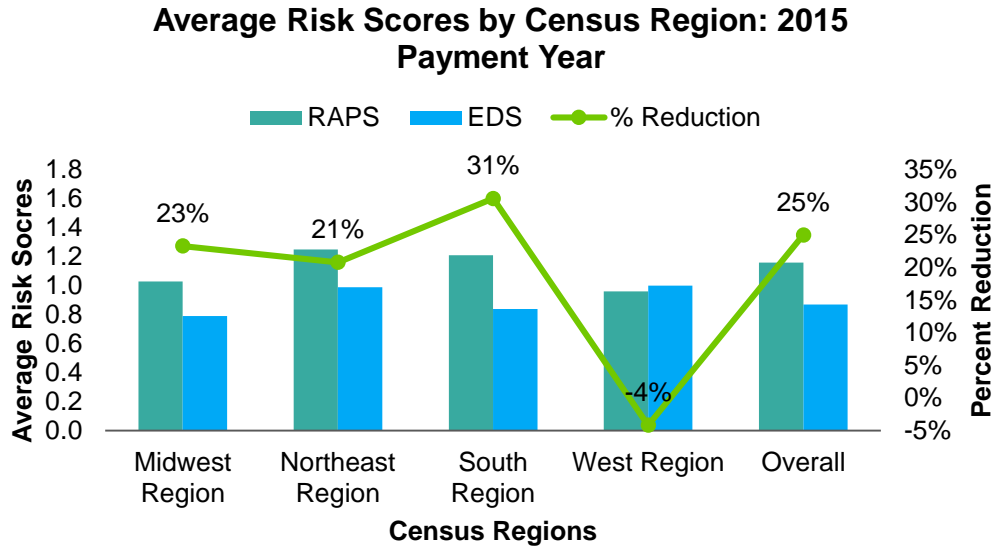


Figure 4: RAPS and EDS—Risk Scores by Dual Eligible Status

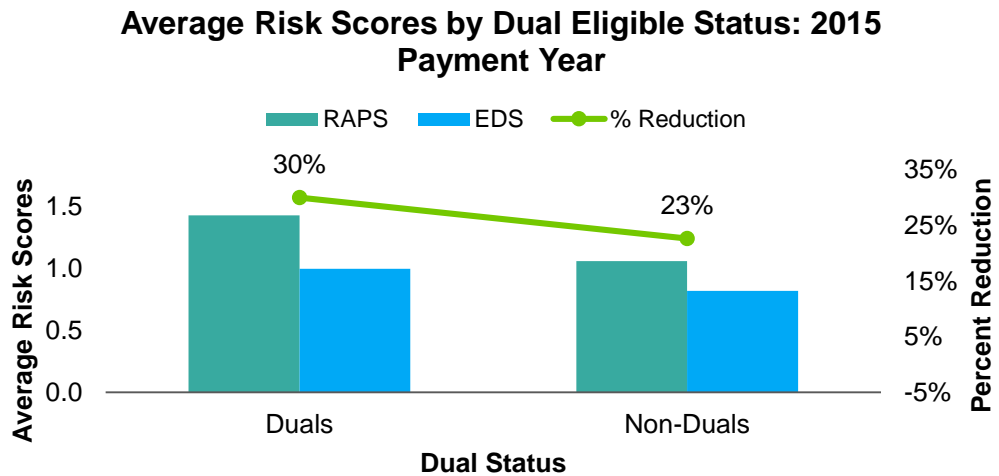


Table 3: RAPS and EDS—Financial Impact Summary

	2015 Payment Year (2014 Dates of Service)
Financial Impact: PMPM; Mean (Range)	
100% RAPS	\$927 (\$798 - \$1,392)
100% EDS	\$692 (\$332 - \$882)
90% / 10% Blend	\$904 (\$758 - \$1,341)
75% / 25% Blend	\$869 (\$687 - \$1,264)
100% RAPS versus 100% EDS	
Difference: Mean (Range)	\$235 (\$94 - \$510)
% Reduction: from 100% RAPS	25.4%
100% RAPS versus 90% / 10% Blend	
Difference: Mean (Range)	\$24 (\$9 - \$51)
% Reduction: from 100% RAPS	2.5%
100% RAPS versus 75% / 25% Blend	
Difference: Mean (Range)	\$58 (\$23 - \$128)
% Reduction: from 100% RAPS	6.3%

Table 4: Top Ten Most Frequently Occurring HCCs

HCC	Description	Prevalence (% of Members)			
		2014		2015	
		RAPS	EDS	RAPS	EDS
18	Diabetes with Chronic Complications	16.5%	10.4%	19.2%	15.1%
108	Vascular Disease	16.4%	8.0%	17.4%	12.5%
111	Chronic Obstructive Pulmonary Disease	16.2%	9.4%	16.4%	12.1%
19	Diabetes without Complication	13.5%	9.8%	13.2%	10.9%
85	Congestive Heart Failure	12.7%	7.5%	13.0%	9.9%
96	Specified Heart Arrhythmias	12.1%	8.4%	12.3%	10.2%
58	Major Depressive, Bipolar, and Paranoid Disorders	8.9%	4.5%	10.1%	6.5%
22	Morbid Obesity	7.4%	3.5%	8.1%	5.4%
40	Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	6.0%	3.8%	6.3%	4.8%
12	Breast, Prostate, and Other Cancers and Tumors	5.8%	4.4%	6.0%	5.1%
Average Prevalence of Top 10 HCCs		11.5%	6.9%	12.2%	9.2%

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