

11/03/2014

TO: Part C and D Star Ratings

SUBJ: Response to the Request for Information about the Impact of Dual Eligibles on Plan Performance

Executive summary

This RFI response is from the perspective of a large, nation-wide, stand-alone prescription drug plan (“PDP Plan”) and is an attempt to quantitatively characterize the relationships between rates of adherence within low income status (LIS) or Medicare-Medicaid dual eligibility (MME) members. As stated in the CMS RFI request, this PDP Plan is in a position to provide analysis of the difference in measurement scores between dual and non-dual (or LIS and non-LIS) enrollees in the same contract and/or plan for all contracts under a parent organization for the Star Ratings measures. Except when noted, analyses in this response include all PDP Plan enrollees. Additionally, analyses of outreach/interventions by the PDP Plan to its members designed to educate, encourage, and equip members to be adherent to prescription medications suggest that LIS/MME members effectively receive less outreach because they are harder to contact, thereby potentially contributing to lower adherence rates. Analyses at both the member and population levels suggest risk adjustment is warranted.

RFI response

Background and methodology

An independent analytics company previously hired by the PDP Plan for predictive adherence analytics provided data analytics support for this RFI response. The analytics company was granted access as a business associate to the PDP Plan’s member eligibility and prescription records from 2013 and 2014. Members used for analysis had to be continuously enrolled over the analysis period and had to have filled at least one prescription (indexed) eligible for inclusion in one of the CMS Star triple weighted adherence measures of oral anti-diabetic medications (OAD), renin-angiotensin system antagonists (RASA), or statin cholesterol lowering medication. LIS and MME members are analyzed as separate groups, although effectively MME members are a subset of LIS members. A “control” group was created by combining members that were neither LIS nor MME. To be included in the analyses, members had to have 12 continuous months of the respective LIS or MME categorization during 2013. All analyses were performed using SAS 9.3 or R 3.0.2.

Section 1: Analysis of the difference in measurement scores between dual and non-dual (or LIS and non-LIS) enrollees in the same contract and/or plan for all contracts under a parent organization for the Star Rating measures.

To determine if adherence rates differed across member type (LIS, MME, or Non-LIS/MME), year-end adherence data for members enrolled with the PDP Plan during 2013 were compared. Tests of binomial proportion were used with unadjusted 2013 PDP Plan adherence data for each adherence therapy area to test the difference between adherence measurement scores for each low income grouping as compared to non-LIS/MME members. LIS/MME groups had significantly lower adherence rates compared to the non-LIS/MME group. Generally, unadjusted adherence rates are about 10% lower in LIS and about 15% lower in MME compared to the non-LIS/MME groups (Table 1).

Table 1. Comparison of unadjusted year-end adherence rates (2013) across differing socioeconomic groupings within the PDP Plan. Chi-square binomial test of proportions used for significant testing. Generally, unadjusted adherence rates are about 10% lower in LIS and about 15% lower in MME compared to the non-LIS/MME groups.

Therapy	Cohort	2013 Year-end Adherence	95% CI	p-value
OAD	Non-LIS/MME	0.732	-	-
	LIS	0.643	(0.639, 0.646)	<.0001
	MME	0.593	(0.549, 0.634)	<.0001
RASA	Non-LIS/MME	0.754	-	-
	LIS	0.640	(0.637, 0.641)	<.0001
	MME	0.583	(0.552, 0.612)	<.0001
Statins	Non-LIS/MME	0.707	-	-
	LIS	0.607	(0.604, 0.609)	<.0001
	MME	0.536	(0.503, 0.568)	<.0001

LIS – Low Income Subsidy

MME – Medicare / Medicaid Eligible

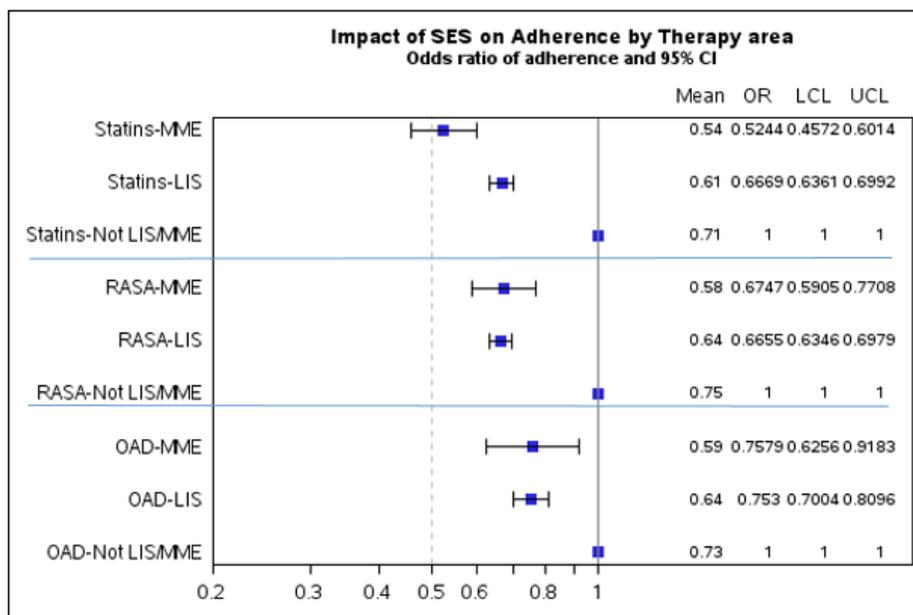
Non-LIS/MME – neither LIS nor MME

Section 2: Use of multivariate modeling to explore the relationship between dual/non-dual/low income subsidy status and scores on the Star Rating adherence measures.

A member-level logistic regression model was developed using 2013 data from the PDP Plan to further examine if LIS/MME populations are less adherent compared to non-LIS/MME member (Figure 1). End of year adherence was modeled dichotomously against low income subsidy or dual eligibility status, with non-LIS/MME members used as a “control” group. Factors controlled for in the model were pre-index adherence, copay amount at index date, drug regimen complexity (measure of health risk status), age, and gender.

Results suggest that LIS and MME members are approximately 25-50% less likely to attain end of year adherence when compared to non-LIS/MME members. The results are significant and most pronounced in the statin drug therapy class.

Impact of SES on Adherence by Therapy area
Odds ratio of adherence and 95% CI



LIS – Low Income Subsidy
MME – Medicare / Medicaid Eligible
Not LIS/MME – neither LIS nor MME

Figure 1. Adjusted odds ratios by therapy area describing the reduced likelihood of achieving year-end adherence LIS and MME members experience when compared to Non-LIS/MME members. The figure shows that LIS and MME members are approximately 25-50% less likely to attain end of year adherence when compared to non-LIS/MME members. The results are significant and most pronounced in the statin drug therapy class.

Population-level modeling was used to further examine the effect of membership distribution at the plan level (Table 2; Figure 2A and 2B). Because there is not access to nationwide

information for a large number of Medicare plans with corresponding confounding, population-level data was simulated using PDP Plan 2013 membership, adherence data and prescription data. ‘Artificial’ population-level datasets containing a fixed percentage of MME or LIS members were created across a percentage gradient, ranging from 5% to 95%. For example, for each percentage value (e.g., 15%), 100 datasets were created containing 1,000 members each using a simple random sampling schema. For an artificial “15%” dataset, exactly 150 members were randomly selected LIS members and the remaining 850 were randomly selected non-LIS members. This process was repeated 100 times for each percentage value along the gradient of 5% to 95%, creating 9,100 datasets total. For each ‘artificial’ dataset, confounding information was extracted for the 1,000 members and summarized to represent a population. The relationship between LIS/MME population distributions and end of year adherence rates for 2013 was examined using linear modeling, controlling for pre-index adherence, new member status, and drug regimen complexity. Results show an evident linear trend between a higher percentages of total plan population that is LIS or MME and lower adherence rates. For example, for every 19.2% (percentage points) decrease in an LIS population, a plan could expect to see a corresponding 1% increase in OAD adherence. Therefore, all things being equal, a plan with 20% LIS membership could expect a 4% favored differential in OAD adherence compared to a very similar plan with 80% LIS (Table 2).

Table 2. Model parameters and effect for percent LIS (top) or percent MME (bottom) regressed against percent adherent for 2013 artificial datasets. This table shows an evident linear trend between a higher percentages of total plan population that is LIS or MME and lower adherence rates.

Therapy	Model R ² (variation explained)	% decrease in proportion LIS to cause 1% increase in adherence
<u>OAD</u>	0.759	19.2
RASA	0.832	12.3
Statins	0.784	13.7
Therapy	Model R ² (variation explained)	% decrease in proportion <u>MME</u> to cause 1% increase in adherence
<u>OAD</u>	0.457	25.6
RASA	0.673	32.3
Statins	0.753	16.4

Relationship between the Percent of LIS Population and Adherence Rates

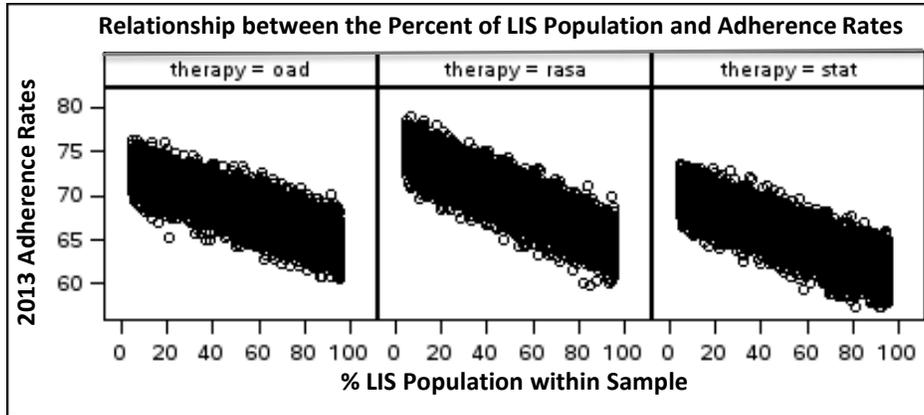


Figure 2A. Linear trend by therapy area for artificial datasets of varying LIS proportion. As the population of LIS increases the adherence rates drop for therapy oad, rasa, and stat.

Relationship between the Percent of Medicare/Medicaid Eligible Population and Adherence Rates

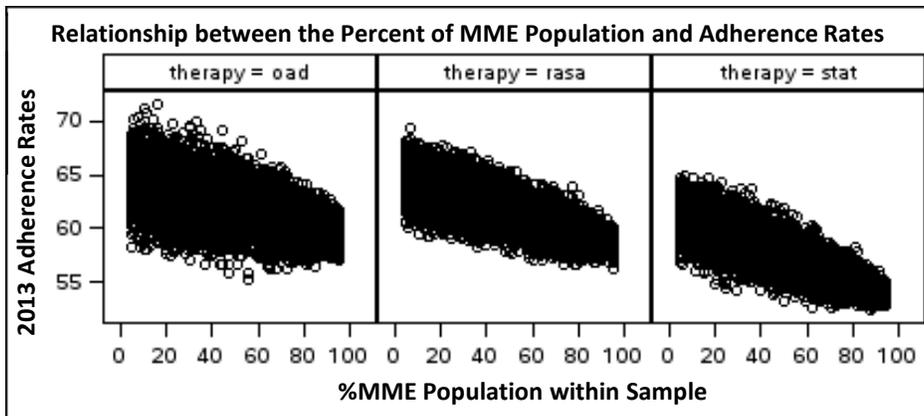


Figure 2B. Linear trend by therapy area for artificial datasets of varying MME proportion. As the population of MME population increases the adherence rates drop for therapy oad, rasa, and stat.

Section 3: Description of interventions in the dual eligible/LIS populations.

Outreaches were conducted in 2014 to the PDP Plan population with prioritization recommendations made by the analytics company. Contact rates were examined across LIS, MME and non-LIS/MME groups and compared the average number of untreated days for these populations as a measure of outreach effectiveness (Figure 3). “IVR” indicates member received an IVR call, “Control-IVR” indicates a call was attempted but was unsuccessful. The PDP Plan also contracted with an outbound call center to conduct live calls from pharmacy technicians.

Although the PDP Plan targets outreach efforts equally across all populations, inaccurate, incomplete, or temporary telephone and/or address information makes it more difficult to reach

LIS/MME members. As a result, an average of about 25% of the LIS/MME population actually receives outreach compared to 37% of non-LIS/MME. Despite effective interventions (as measured by untreated days), lower contact rates within the LIS/MME populations appear to negatively impact adherence. Approximately 40% of phone numbers for the LIS/MME population are invalid, compared to only 9% invalid for non-LIS/MME populations. LIS/MME populations have a higher number of untreated days compared to non-LIS/MME. After adjusting for contact rates, LIS/MME populations also receive more outreach than non-LIS/MME. LIS/MME members only effectively receive less outreach because the volume of invalid phone numbers in those populations are higher. LIS/MME members are harder to reach and this could contribute to the higher number of untreated days within this population. Though LIS/MME populations have more untreated days compared to non-LIS/MME, outreach is effective within those members. One consideration for CMS would be to provide plan sponsors with updated contact information for auto-assignees to allow for improved reach rates for effective interventions.

Percent Receiving Intervention and Valid Phone Rate
and
Difference in Mean Untreated Days

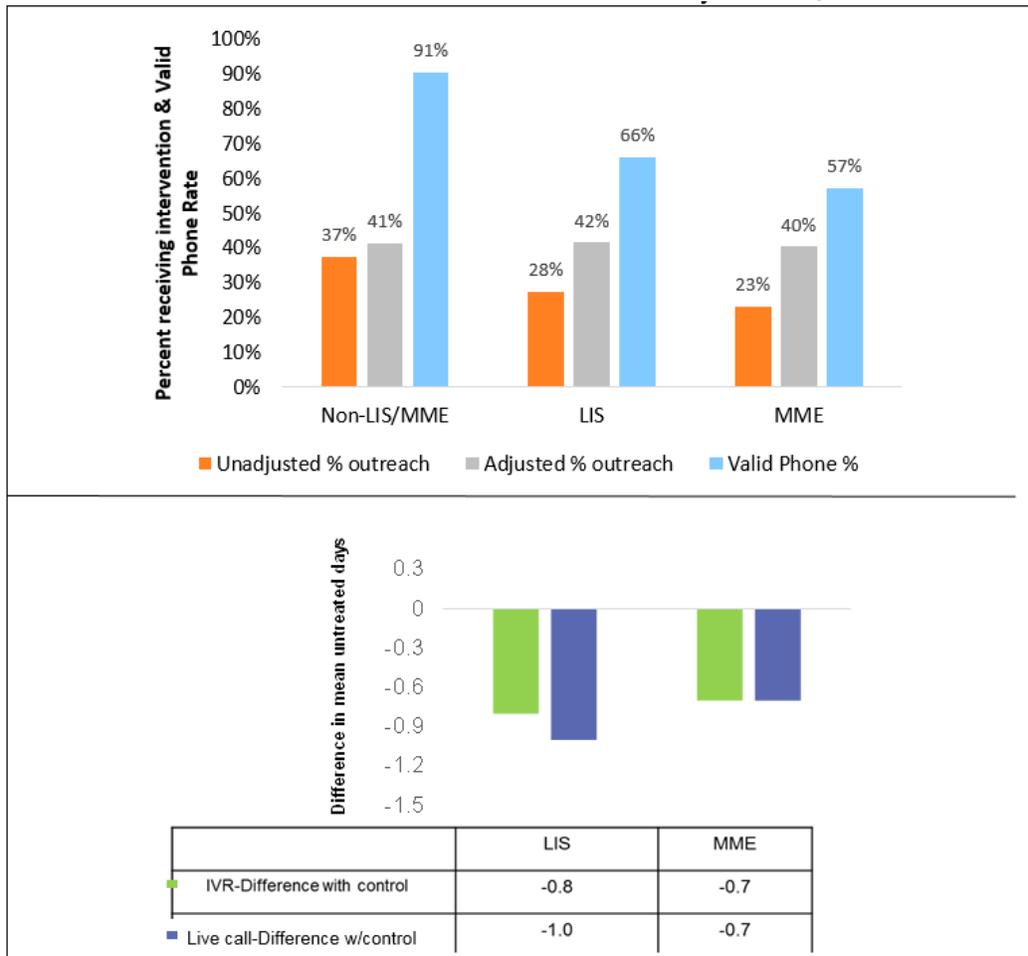


Figure 3. Proportion receiving outreach and adjustment for valid phone rates (top). This top graph shows an average of about 25% of the LIS/MME population actually receives outreach compared to 37% of non-LIS/MME. Approximately 40% of phone numbers for the LIS/MME population are invalid, compared to only 9% invalid for non-LIS/MME populations.

Intervention effectiveness (bottom). The bottom graph shows that the LIS/MME members are harder to reach and this could contribute to the higher number of untreated days within this population. Though LIS/MME populations have more untreated days compared to non-LIS/MME, outreach is effective within those members.

Conclusion

Low income status members, including members with dual eligible status for Medicaid-Medicare, are shown to have significantly lower medication adherence rates than other members of the same plan after controlling for member differences. Disparity in attainment of end of year adherence for the three triple weighted Star Rating measures can be shown at the member level and at the population level. Modeling results agree with the natural outcomes the PDP plan observed this year (2014) when they experienced a shift in membership distribution from the 2013 to 2014 time period. In 2013, LIS members constituted about 94% of the PDP plan's member distribution. In 2014, that number is down to approximately 90%. Preliminary predictions of year-end adherence, along with the aforementioned findings in this paper, suggest this membership change will directly translate to a shift in adherence rates in the absence of any outreach. Furthermore, intervention data seem to indicate that, regardless of intervention, LIS/MME members continue to perform more poorly relative to non-LIS members when matched to un-contacted non-LIS/MME members. Lower rates of contact among the lower socioeconomic status cohorts can be explained by a lower valid phone rate in those populations, and may even point, in light of contact disparity relative to invalid phone rates, to a greater effort on the part of the PDP plan in contacting lower socioeconomic status members.

Medication adherence comprises 3 of the 15 Part D star measures for 2014 and each of the three adherence measures carries triple weighting in the calculation of the overall star rating. Additionally, all three of the adherence measures are included in the calculation of the improvement measure, which was increased to 5x weighting for 2014 star ratings. Although a plan may be performing well in other CMS measured areas, the CMS Medicare Plan Finder blocks enrollment into low performing plans (i.e. plans with less than 3 stars for at least 3 years in a row). Without applying some form of risk adjustment to star rating calculations, CMS makes it difficult for plans who provide services for large LIS populations to compete with plans who serve lower percentages of LIS members.

The current study had a number of limitations. First, these are results from a single, large PDP contract (>300k lives) and while it covers a wide geographic area, there is a large preponderance of membership in California, where the CMS MME demonstrations have had a large impact. Second, there may be some bias introduced by the large size of the LIS proportion of the target population. The PDP Plan's proportion of LIS has traditionally been above 90%. However, share of LIS membership is now decreasing, most likely due to the CMS demonstrations. Lastly, only persistent MME members (those present as MME for the entire year) were used in the analysis due to administrative complications of members attaining status later in the year. Hence, MME

sample size was limited and some bias may have been introduced into both the MME and LIS groups. Bias from using only persistent MME members will tend to decrease the observable difference in effect between LIS and MME populations. Hence, it is unlikely this detracted from the results regarding differences from non-LIS/MME members.