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# Analysis of Care Coordination Outcomes /

A Comparison of the Mercy Care Plan Population to  
Nationwide Dual-Eligible Medicare Beneficiaries

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The background is a solid blue color. It features decorative white wavy lines that flow across the top and right sides of the page. These lines are composed of many thin, parallel lines that create a sense of movement and depth.

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## Executive Summary

Dual eligible beneficiaries are those individuals who are eligible for both Medicare and Medicaid and are among the most expensive and vulnerable populations in the healthcare system. Because their care is currently covered by two separate programs, incentives for improved coordination of care are weaker than if a single payer were responsible for their care. As such, there are real opportunities for initiatives for care improvement and cost reduction.

The Centers for Medicare and Medicaid Services (CMS), through the Medicare-Medicaid Coordination Office, is currently leading an initiative to test coordinated, integrated care approaches for dual eligibles. At this time, 26 states are proposing to test different models including contracting with managed care organizations or integrated provider networks to coordinate care for dual eligibles.

One example of an existing managed care organization that focuses on integrated care for dual eligibles is the Mercy Care Plan. Mercy Care Plan, under contracts with CMS and the Arizona Health Care Cost Containment System (AHCCCS), is a not-for-profit health plan serving over 340,000 Medicaid, Medicare Special Needs Plan and developmentally disabled members. Established in Phoenix, Arizona in 1985, Mercy Care is jointly sponsored in Phoenix by St. Joseph's Hospital and Medical Center (a Dignity Health facility) and, in Tucson, by Carondelet Health Network (a member of Ascension Health). The plan is fully administered by Schaller Anderson, an Aetna company. Under this model, Aetna assumes the operational and management oversight of the health plan, including the hiring of all health plan employees and the provision of financial, clinical and operational systems. In operation since 1985, Mercy Care Plan emphasizes care coordination and management through various components that include: health risk assessments, patient-centered medical homes, evidence based guidelines that drive interventions, provider tools, health coaching and education, medication management, linked medical data, and the use of predictive modeling to target interventions.

In an attempt to understand the impact of Mercy Care's model of care coordination on the health outcomes for dual eligibles, Avalere undertook an analysis to evaluate care and utilization measures between the Mercy Care Plan population and nationwide, Medicare fee-for-service (FFS) dual eligibles.

For this analysis, we looked at four standardized measures of comparison, all computed in accordance with 2012 Healthcare Effectiveness Data and Information Set (HEDIS) specifications:

- Adults' access to preventive/ambulatory health services
- Inpatient utilization
- Emergency department (ED) utilization
- All-cause readmissions

As the HEDIS specifications did not risk adjust the first three measures, we created a plan-level model for these measures to ensure a fair comparison between populations. The model risk adjusted the Mercy Care Plan outcomes to reflect what would have occurred if the Mercy Care members were more similar in risk to the FFS dual eligibles<sup>1</sup>.

### Results: Mercy Care Performs Better than Fee-For-Service Across All Four Measures Examined

The results of the analysis revealed that the risk adjusted Mercy Care Plan members made higher use of preventive/ambulatory services, and had lower rates of inpatient utilization, ED utilization and all-cause readmissions relative to patterns of care for dual eligibles enrolled in Original Medicare (FFS). Specifically, when compared to the total national FFS dual eligibles, and adjusted to match the risk of the FFS dual eligibles, the total Mercy Care population exhibited:

- 3% higher proportion of beneficiaries accessing preventive/ambulatory health services
- 31% lower discharge rate (as a measure of inpatient utilization)
- 43% lower rate of days spent in the hospital (as a measure of inpatient utilization)
- 19% lower average length of stay (as a measure of inpatient utilization)
- 9% lower rate of ED visits
- 21% lower readmission rate

These findings suggest that Mercy Care's model of care is successful in keeping people out of the hospital and in lowering readmissions relative to fee-for-service.

Moving forward, the Mercy Care model should receive careful consideration among policy makers looking to improve health outcomes while reducing costs for dual eligible beneficiaries.

## Background

Dual eligible beneficiaries (“duals”) are among the most vulnerable and expensive sub-groups in the Medicare and Medicaid population<sup>2</sup>. Eligible for both Medicare and Medicaid coverage, duals tend to be of low socioeconomic status and exhibit poor health outcomes. They also incur 2.2 times as much annual fee-for-service (FFS) Medicare spending as non-duals<sup>3</sup>. Given that payers and policy-makers are facing increasing pressure to reduce healthcare costs while improving quality of care, the duals population represents a prime opportunity for improvement.

Care coordination initiatives have the potential to reduce waste, while improving information flow and health outcomes as a patient moves across different settings of care. Care coordination also has significant potential for savings. The cost of potentially avoidable hospitalizations for dual eligibles alone was projected to be \$7-\$8 billion in 2011<sup>4</sup>, and recent research has shown that care coordination in the form of early outpatient follow-up can reduce the risk of rehospitalization<sup>5</sup>.

Compared to non-duals, a greater proportion of duals make use of inpatient hospital services<sup>6</sup>, emergency rooms, and long-term care<sup>7</sup>. Dual eligibles also demonstrate lower rates of preventive service use<sup>8</sup>. The application of a care coordination program to this population has the potential to yield significant benefits. Yet, today less than two percent of dual eligibles are enrolled in some type of integrated care program that coordinates at least some services<sup>9</sup>.

Since its 1982 inception, Arizona Medicaid has required all participants to enroll in Medicaid managed care. Mercy Care Plan, under contracts with CMS and the Arizona Health Care Cost Containment System (AHCCCS), is a not-for-profit health plan serving over 340,000 Medicaid, Medicare Special Needs Plan and developmentally disabled members. Established in Phoenix, Arizona in 1985, Mercy Care is jointly sponsored in Phoenix by St. Joseph’s Hospital and Medical Center (a Dignity Health facility) and, in Tucson, by Carondelet Health Network (a member of Ascension Health). The plan is fully administered by Schaller Anderson, an Aetna company.

Under this model, Aetna assumes the operational and management oversight of the health plan, including the hiring of all health plan employees and the provision of financial, clinical and operational systems. In addition to participating in Arizona’s Medicaid managed care program, the Mercy Care plan also operates as a Medicare Advantage dual eligible special needs plan (DE-SNP), providing Medicare and Medicaid covered services including acute, long-term care, and pharmacy services to 16,000 dual eligible beneficiaries in the Maricopa, Pima and Santa Cruz counties.

Approximately 23 percent of the Mercy Care dual eligible population receives long term care, and 5 percent are developmentally disabled. The Mercy Care Plan emphasizes care coordination and management through: health risk assessments, patient-centered medical homes, evidence based guidelines that drive interventions, provider tools, health coaching and education, medication management, linked medical data, and the use of predictive modeling to target interventions.

The purpose of this study was to determine whether differences in health outcomes and utilization exist between the Mercy Care Plan population and the nationwide Medicare FFS dual eligible population. Identifying differences in outcomes and utilization between these two populations may provide insight into the value of care coordination for the dual eligible population.

## Study Design

### Data Sources

Mercy Care analyzed their own population and utilized a 100 percent sample of dual-eligible beneficiary data from CY 2009 to compute measure outcomes. They used CY 2008 data to risk adjust the all-case readmission measure. Mercy Care provided Avalere with their population outcomes for our four measures of interest.

To conduct the national analysis Avalere utilized the CY 2009 Medicare Standard Analytic Files (SAFs), which included specific service dates. We used a 100 percent sample of Medicare beneficiary data for the inpatient utilization and emergency department visits measures, but our analysis was limited to the five percent random sample for the readmissions and access measures to ensure compliance with HEDIS specifications (these measures require information on physician visits, for which only a five percent random sample is publicly available). We used the CY 2008 SAFs to risk adjust the all-cause readmission measure and construct our risk adjustment model for the remaining measures. These measures are described in greater detail below.

### Evaluation of Care Outcomes and Patient Access

We examined four points of comparison related to care outcomes and patient access. The four measures were:

1. Adults' Access to Preventive/Ambulatory Health Services—*This measure assesses whether adult members receive preventive and ambulatory services.*
2. Inpatient utilization—*This measure assesses the extent to which beneficiaries made use of inpatient hospital treatment.*
3. Emergency department (ED) visits—*This measure assesses beneficiary use of emergency department visits.*
4. All-cause readmissions—*This measure assesses the number of acute inpatient stays that were followed by an acute readmission for any diagnosis within 30 days for members 18 years of age and older.*

All measures were computed in accordance with 2012 Healthcare Effectiveness Data and Information Set (HEDIS) specifications<sup>10</sup>. At the time of analysis, the 2012 HEDIS risk-adjustment tables required for calculation of the all-cause readmission rate were unavailable. As such, we used 2011 HEDIS risk-adjustment tables instead.

Out of the four measures, only the all-cause readmissions measure has a risk adjustment component as part of the official HEDIS definition. Given anticipated differences in case-mix, we adopted a risk-adjustment approach similar to that used by CMS' Hierarchical

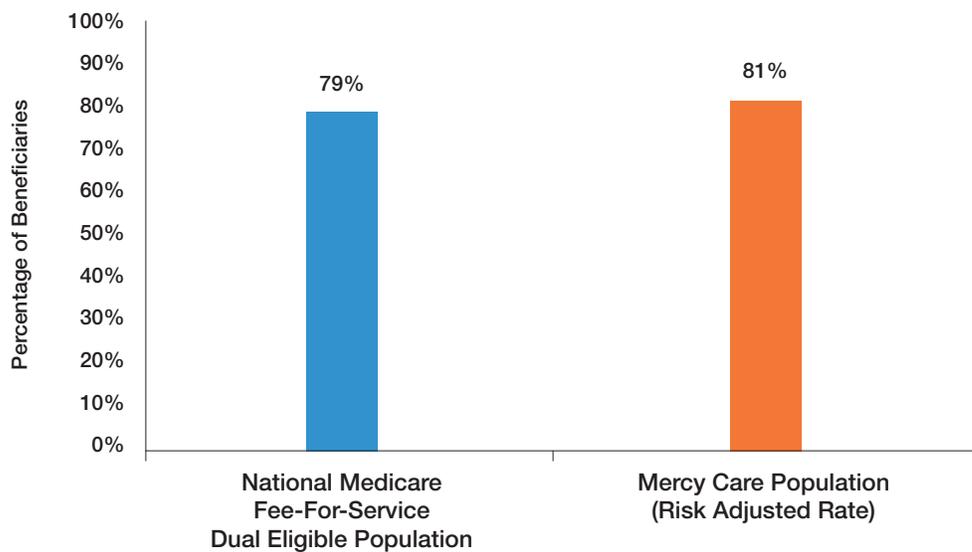
Condition Category (HCC) model to produce plan-level risk adjusted rates of inpatient utilization, ED visits and adults' access to preventive/ambulatory health services for the Mercy Care population. The risk adjusted rates reflect what would have occurred if the Mercy Care members were more similar in risk to the FFS dual eligibles. For further details on our risk adjustment method, please see the Appendix.

## Results

### Preventive/Ambulatory Services

The Mercy Care population made slightly greater use of preventive/ambulatory services. When risk adjusted for case mix differences, the Mercy Care population had a three percent (two percentage point difference) higher percentage of beneficiaries accessing preventive/ambulatory health services than the total FFS dual eligibles, as shown in Figure 1.

**Figure 1. Adults' Access to Preventive/Ambulatory Health Services:  
Percentage of Members with One or More Preventive/Ambulatory Visits in 2009**



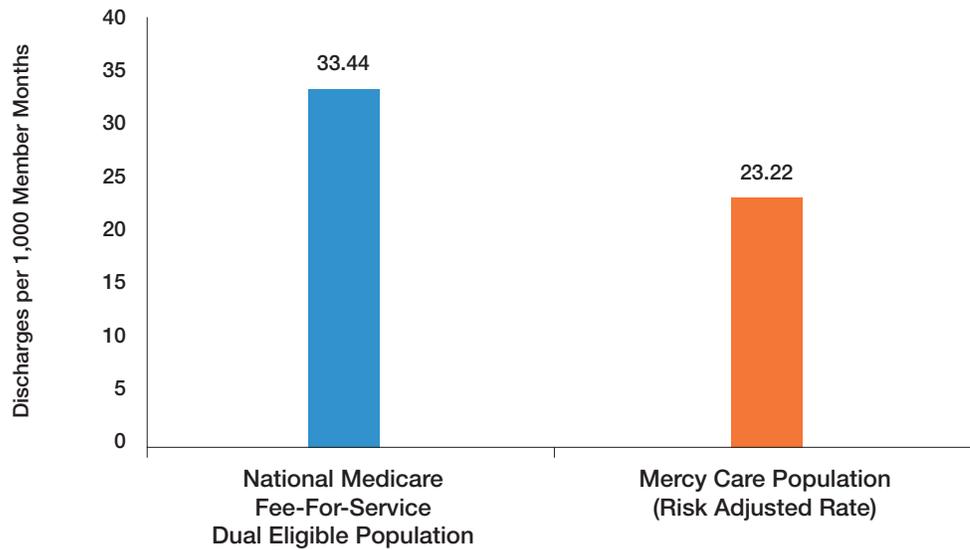
Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

### Inpatient Utilization

The inpatient utilization measure assesses the rate of discharges, the rate of days spent in the hospital, and the average length of stay. For all three elements of inpatient utilization, the Mercy Care population demonstrated lower risk-adjusted levels of utilization compared to the national FFS dual eligibles (Figures 2-4).

The Mercy Care population exhibited a 31 percent lower risk-adjusted discharge rate than the total FFS dual eligibles.

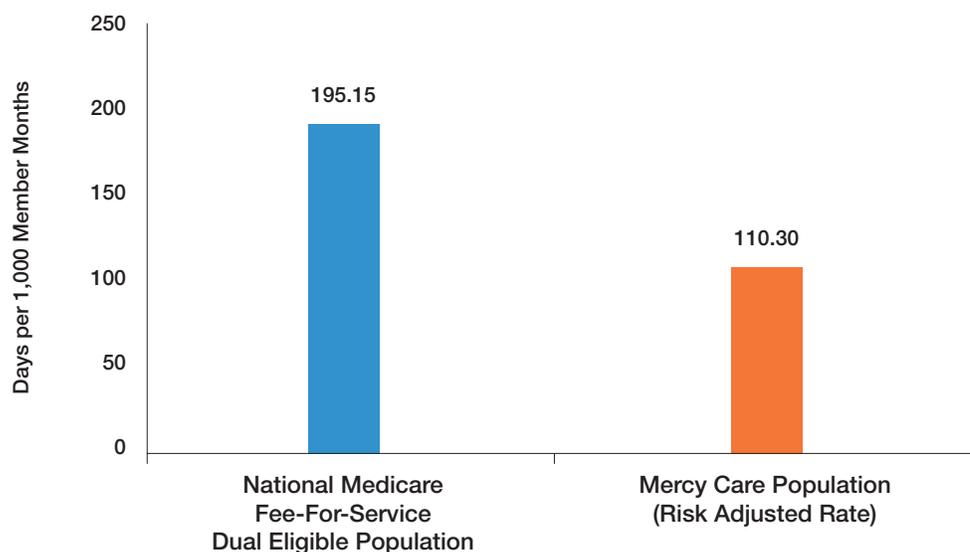
**Figure 2. Inpatient Utilization: Discharges per 1,000 Member Months in 2009**



Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

The Mercy Care population exhibited a 43 percent lower risk-adjusted rate of days spent in the hospital than the total FFS dual eligibles.

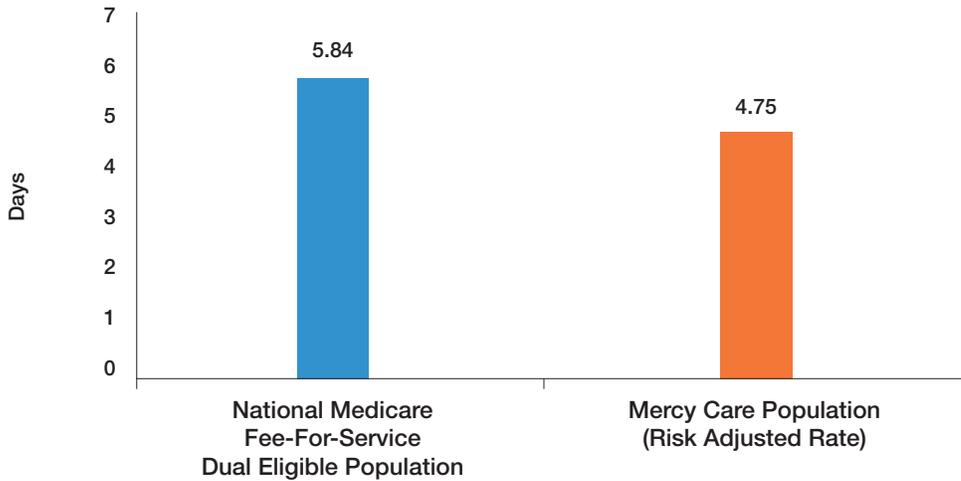
**Figure 3. Inpatient Utilization: Days per 1,000 Member Months in 2009**



Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

The Mercy Care population exhibited a 19 percent lower risk-adjusted average length of stay than the total FFS dual eligibles.

**Figure 4. Inpatient Utilization: Average Length of Stay in 2009**

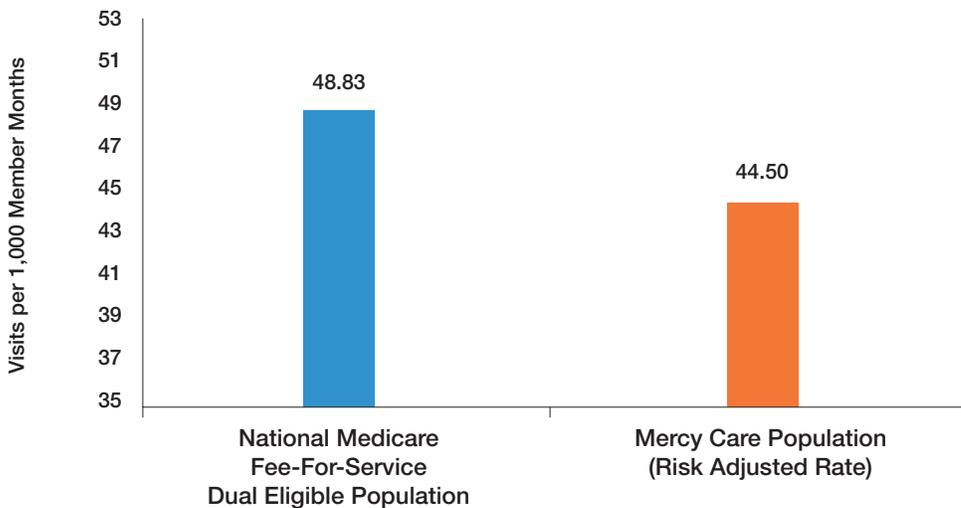


Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

### Emergency Department Utilization

Similar to inpatient utilization, the Mercy Care population also demonstrated 9 percent lower risk-adjusted rate of ED utilization (Figure 5).

**Figure 5. Emergency Department Visits: Visits per 1,000 Member Month in 2009**

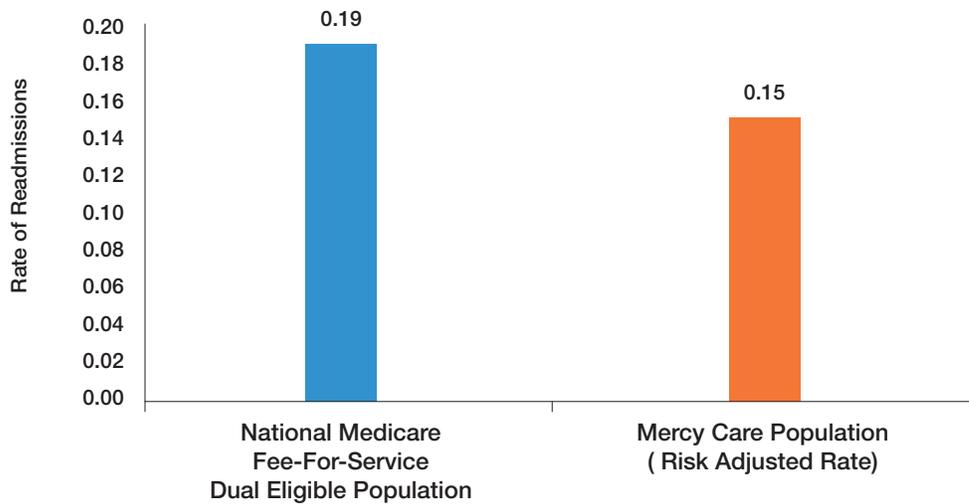


Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

## Readmissions

With respect to 30-day all-cause readmissions, the Mercy Care population demonstrated lower utilization, as seen in Figure 6. The Mercy Care population exhibited a 21 percent lower risk-adjusted readmission rate than the total FFS dual eligibles.

**Figure 6. All-Cause 30-Day Readmission Rate in 2009**



Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

## Implications

In general, the Mercy Care population made slightly greater use of preventive services, consistent with their care coordination model and targeted care management efforts for dual eligibles. Further, Mercy Care's clinical model can be tied to decreased utilization, as evidenced by lower inpatient and ED utilization, and readmission rates (compared to the FFS Medicare duals). Lower utilization in these areas translates to lower costs, and suggests an improvement in health outcomes for these beneficiaries.

Given the disproportionate amount of spending already tied to the dual eligibles, identifying ways of decreasing costs while maintaining quality of care is critical. Care coordination initiatives such as those operated by Mercy Care offer a model upon which large-scale programs can be based.

It is noteworthy that Mercy Care's pre-risk adjusted rates of utilization tended to be higher than the national Medicare duals population. However, this situation reversed upon risk adjustment. This underscores how crucial it is to consider differences in case-mix when evaluating health outcomes between populations. The case-mix of the Mercy Care Plan is unique as a large proportion of beneficiaries are in the Medicare Acute Care Program or are classified as developmentally disabled. Further, approximately a third of the population receives long term services and supports.

## Appendix

### Risk Adjustment Methodology for Inpatient Utilization, ED Visits and Adults' Access to Preventive/Ambulatory Health Services

As seen in the tables below, while the Mercy Care Plan population was similar to the national FFS duals with respect to age and sex distribution, the most common diagnoses in these populations were very different.

Sex and Age Group	National FFS Duals		Mercy Care Duals	
	Number of Beneficiaries	Percent of Total	Number of Beneficiaries	Percent of Total
Male, Ages <34	11,366	3%	255	3%
Male, Ages 35-44	15,666	5%	449	5%
Male, Ages 45-54	23,972	7%	698	8%
Male, Ages 55-64	18,521	6%	484	6%
Male, Ages 65-74	31,725	10%	761	9%
Male, Ages 75-84	19,079	6%	407	5%
Male, Ages 85-94	5,066	2%	127	1%
Male, Ages >95	354	0%	9	0%
Female, Ages <34	9,694	3%	252	3%
Female, Ages 35-44	14,454	4%	432	5%
Female, Ages 45-54	24,555	7%	748	9%
Female, Ages 55-64	27,437	8%	836	10%
Female, Ages 65-74	57,814	17%	1,444	17%
Female, Ages 75-84	47,830	14%	1,132	13%
Female, Ages 85-94	22,586	7%	609	7%
Female, Ages >95	2,786	1%	71	1%
<b>TOTAL</b>	<b>332,905</b>	<b>100%</b>	<b>8,714</b>	<b>100%</b>

Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan. For the national FFS duals, data was limited to beneficiaries who were Parts A and B duals for at least 11 months. For the Mercy Care duals, data was limited to beneficiaries who were enrolled in Mercy Care's DE-SNP for at least 11 months.

National FFS Duals		Mercy Care Duals	
Top 10 Condition Categories	Percent of Beneficiaries	Top 10 Condition Categories	Percent of Beneficiaries
Diabetes without Complication	16%	Chronic Obstructive Pulmonary Disease	22%
Chronic Obstructive Pulmonary Disease	14%	Diabetes without Complication	21%
Congestive Heart Failure	11%	Vascular Disease	19%
Vascular Disease	9%	Congestive Heart Failure	17%
Renal Failure	7%	Renal Failure	16%
Specified Heart Arrhythmias	6%	Polyneuropathy	15%
Seizure Disorders and Convulsions	5%	Seizure Disorders and Convulsions	13%
Major Depressive, Bipolar, and Paranoid Disorders	5%	Major Depressive, Bipolar, and Paranoid Disorders	13%
Polyneuropathy	5%	Specified Heart Arrhythmias	11%
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	4%	Diabetes with Renal or Peripheral Circulatory Manifestation	11%

Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan. For the national FFS duals, data was limited to beneficiaries who were Parts A and B duals for at least 11 months. For the Mercy Care duals, data was limited to beneficiaries who were enrolled in Mercy Care's DE-SNP for at least 11 months.

According to HEDIS specifications, the inpatient utilization, ED visits and adults' access to preventive/ambulatory health services measures are not risk adjusted. However, to ensure a fair comparison across populations, we created a model to risk adjust the Mercy Care Plan's outcomes to reflect what would have occurred had this population been more similar in risk to the FFS dual eligibles.

To create our risk adjustment model, we used the condition and age/sex categories in CMS' Hierarchical Condition Category (HCC) model. The CMS-HCC model employs a set of weights for HCC categories (based on diagnoses) and age/sex categories, ultimately producing an HCC score for each beneficiary entered into the model. The CMS-HCC model is designed to predict total annual expenditures on all Medicare-covered services.

However, for our purposes, we needed a model to predict expected outcomes for each of our measures of interest. For ease of implementation, the risk adjustment models we developed for these outcomes used the overall structure of the CMS-HCC model but calibrated separate, measure-specific weights for the condition and age/sex categories.

Isolating the national Medicare FFS dual-eligibles by using the five percent sample of the 2009 Standard Analytic File (SAF) Limited Data Sets, we estimated linear regression models for each of our measures, using the HCC condition and age/sex categories as explanatory variables. The person-specific levels for each metric served as the dependent variable. The dependent variables for each regression were:

1. Inpatient utilization – discharges/1000 member months
2. Inpatient utilization – days/1000 member months
3. Inpatient utilization – average length of stay
4. ED visits – visits/1000 member months
5. Adults' access to preventive/ambulatory health services – percentage of members with 1 or more preventive/ambulatory visits

We used linear regression models for each of the measures, as linear regressions are also the basis for the CMS HCC model.

For each of the measures, we provided the resulting coefficients from our models to Mercy Care, who used them to replace the HCC weights in the CMS model. Mercy Care then applied these models to their population data. The average scores derived from the modified HCC model represent the expected rate for each of our measures.

To produce the risk adjusted rates for Mercy Care, we divided the observed rate by Mercy Care's expected rate and then multiplied this ratio by the national average Medicare FFS dual eligible rate.

As part of the inpatient utilization measure, we calculate average length of stay (ALOS). For this particular component, we were unable to develop a regression model with good predictive power. To resolve this issue, we computed the expected inpatient LOS by first dividing Mercy Care's observed days rate by their observed discharges to get a new observed ALOS. Then, we divided Mercy Care's expected days rate over their expected discharges rate to get a new expected ALOS. We divided the new observed ALOS by the new expected ALOS and applied this to the Medicare FFS dual eligible average to get the final risk adjusted ALOS for the Mercy Care population.

## Limitations

This analysis was subject to a number of limitations. Firstly, to identify the Medicare FFS dual eligibles in SAFs, we used the state buy-in variable (SBI) to capture both full and partial duals<sup>11</sup>. We acknowledge that the use of the SBI variable has been known to either undercount or overcount duals depending on the state<sup>12</sup>, however, we attempted to mitigate these inaccuracies through the use of national level data.

While we captured both full and partial duals in the FFS population, the Mercy Care Plan only enrolls full duals. Full dual eligibles qualify for full Medicaid benefits, including long-term services and supports provided in both institutions and in the community as well as prescription drugs. For this group, Medicaid may also pay Medicare premiums and cost sharing. By contrast, partial dual eligibles are not eligible for full Medicaid benefits but may receive assistance with some or all of their Medicare premiums and cost sharing. Partial duals do not meet state eligibility requirements for full dual status, and may have access to greater resources than full duals. Although our results were risk adjusted, this difference in population may have some impact on our findings.

In addition, to risk adjust the inpatient utilization, ED visits, and adults' access to preventive/ambulatory health services measures, we used linear regression models to remain consistent with the model structure used as the basis for the CMS-HCC model. However, some of the types of measures (i.e. the dependent variables) are often modeled using methods other than linear regression. For example, a patient-level rate of readmission is often modeled using logistic regression, which avoids a predicted readmission rate below zero or above one (a possibility with linear regression models of patient-level readmission). However, our model was used to predict plan-level rates, and plan-average case mix is unlikely to be at the high or low extremes that might yield predicted rates below zero or above one. Furthermore, we explored other model structures, including logit and Poisson models as alternatives to linear regression. We found that these alternatives did not provide any considerable gains in model fit or predictive power.

## Data Tables

### Total Inpatient: Discharges per 1,000 member months

Age Group	National FFS Duals	Mercy Care Duals	Mercy Care Duals		
			Expected Rate	Observed/Expected	Risk-Adjusted Rate
<b>TOTAL</b>	33.44	41.61	59.92	0.69	23.22
<1*	285.01	0.00			
1 to 9*	164.07	0.00			
10 to 19*	50.06	0.00			
20 to 44	23.51	26.28			
45 to 64	33.67	43.36			
65 to 74	30.92	40.30			
75 to 84	37.65	53.01			
85+	46.36	51.95			

\*There are a small number of FFS dual eligibles under the age of 20 who qualify due to certain disabilities or illnesses. The Mercy Care plan does not have any beneficiaries of this type.

Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

### Total Inpatient: Days per 1,000 member months

Age Group	National FFS Duals	Mercy Care Duals	Mercy Care Duals		
			Expected Rate	Observed/Expected	Risk-Adjusted Rate
<b>TOTAL</b>	195.15	208.17	368.30	0.57	110.30
<1*	2609.34	0.00			
1 to 9*	1052.28	0.00			
10 to 19*	269.80	0.00			
20 to 44	120.72	125.11			
45 to 64	190.65	220.94			
65 to 74	186.09	201.21			
75 to 84	231.37	272.61			
85+	274.17	246.39			

\*There are a small number of FFS dual eligibles under the age of 20 who qualify due to certain disabilities or illnesses. The Mercy Care plan does not have any beneficiaries of this type.

Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

## Total Inpatient: Average Length of Stay

Age Group	National FFS Duals	Mercy Care Duals	Mercy Care Duals			
			Mercy Care Duals Observed Days/Observed Discharges	Mercy Care Duals Expected Days/Expected Discharges	Observed/Expected	Risk-Adjusted Rate**
<b>TOTAL</b>	5.84	5.00	5.00	6.15	0.81	4.75
<1*	9.16	0.00				
1 to 9*	6.41	0.00				
10 to 19*	5.39	0.00				
20 to 44	5.13	4.76				
45 to 64	5.66	5.10				
65 to 74	6.02	4.99				
75 to 84	6.14	5.14				
85+	5.91	4.74				

\*There are a small number of FFS dual eligibles under the age of 20 who qualify due to certain disabilities or illnesses. The Mercy Care plan does not have any beneficiaries of this type

\*\*The risk adjusted rate for this measure was calculated using the expected and observed rates for the discharges/1000 member months and days/1000 member months

Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

## ER Visits per 1,000 Member Months

Age Group	National FFS Duals	Mercy Care Duals	Mercy Care Duals		
			Expected Rate	Observed/Expected	Risk-Adjusted Rate
<b>TOTAL</b>	48.83	69.46	76.21	0.91	44.50
<1*	95.82	0.00			
1 to 9*	98.13	0.00			
10 to 19*	88.45	50.00			
20 to 44	81.32	107.48			
45 to 64	58.97	82.25			
65 to 74	33.81	45.79			
75 to 84	34.29	48.75			
85+	38.85	48.16			

\*There are a small number of FFS dual eligibles under the age of 20 who qualify due to certain disabilities or illnesses. The Mercy Care plan does not have any beneficiaries of this type.

Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

## All-Cause Readmission Rate

Age Group	Sex	Observed Rate	Average Adjusted Probability	Observed/Expected	National Risk Adjusted Rate	Mercy Care Duals			
						Observed Rate	Average Adjusted Probability	Observed/Expected	Mercy Care Risk Adjusted Rate
<b>TOTAL</b>	Male	0.217	0.220	0.984	0.213	0.176	0.252	0.699	0.146
	Female	0.188	0.198	0.949	0.178	0.174	0.221	0.789	0.143
	TOTAL	0.198	0.206	0.963	0.191	0.175	0.232	0.755	0.144
<b>18 to 44</b>	Male	0.219	0.273	0.801	0.176	0.181	0.290	0.625	0.125
	Female	0.199	0.267	0.745	0.148	0.193	0.281	0.687	0.124
	TOTAL	0.209	0.270	0.773	0.162	0.187	0.285	0.657	0.125
<b>45 to 54</b>	Male	0.222	0.244	0.912	0.203	0.178	0.276	0.646	0.137
	Female	0.185	0.242	0.765	0.142	0.145	0.267	0.542	0.095
	TOTAL	0.203	0.243	0.837	0.170	0.160	0.271	0.590	0.114
<b>55 to 64</b>	Male	0.221	0.224	0.986	0.218	0.208	0.267	0.778	0.163
	Female	0.197	0.221	0.891	0.175	0.182	0.245	0.741	0.141
	TOTAL	0.206	0.222	0.930	0.192	0.191	0.253	0.755	0.149
<b>65 to 74</b>	Male	0.211	0.189	1.118	0.236	0.159	0.216	0.735	0.152
	Female	0.189	0.177	1.068	0.201	0.185	0.199	0.928	0.168
	TOTAL	0.197	0.181	1.087	0.214	0.176	0.204	0.863	0.164
<b>75 to 84</b>	Male	0.212	0.194	1.096	0.233	0.152	0.211	0.719	0.150
	Female	0.184	0.177	1.040	0.192	0.179	0.194	0.924	0.169
	TOTAL	0.193	0.182	1.058	0.204	0.173	0.198	0.871	0.166
<b>85+</b>	Male	0.217	0.195	1.112	0.242	0.180	0.235	0.765	0.165
	Female	0.180	0.172	1.049	0.189	0.148	0.182	0.815	0.145
	TOTAL	0.187	0.176	1.063	0.199	0.155	0.193	0.802	0.148

Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

**Adult's Access to Preventive/Ambulatory Health Services:  
Percent of Beneficiaries with 1+ Preventive/Ambulatory Visits**

Age Group	National FFS Duals	Mercy Care Duals	Mercy Care Duals		
			Expected Rate	Observed/Expected	Risk-Adjusted Rate
<b>TOTAL</b>	79%	94%	0.909	1.036	81%
20 to 44	78%	89%			
45 to 64	82%	95%			
65+	77%	95%			

Sources: Avalere analysis of 2008-2009 Medicare Standard Analytic Files (SAF). Mercy Care analysis of 2008-2009 claims and demographic data for the Mercy Care Plan.

## Notes

- <sup>1</sup> Our risk adjustment model used the Medicare FFS dual eligible population as a benchmark. Therefore, the risk adjusted rates for the FFS dual eligibles are equivalent to their unadjusted rates.
- <sup>2</sup> Koroukian, SM., Dahman, B., Copeland, G., et al. The Utility of the State Buy-In Variable in the Medicare Denominator File to Identify Dually Eligible Medicare-Medicaid Beneficiaries: A Validation Study. 2010. *Health Serv Res.* 45(1): 265–282.
- <sup>3</sup> Medicare Payment Advisory Commission. A Data Book: Health Care Spending and the Medicare Program. June, 2012. <http://www.medpac.gov/documents/Jun10DataBookEntireReport.pdf>. Accessed May 17, 2012.
- <sup>4</sup> Segal, M. Dual Eligible Beneficiaries and Potentially Avoidable Hospitalizations. CMS Policy Insight Brief. 2011
- <sup>5</sup> Hernandez, AF., Greiner, MA., Fonarow, GC., et al. Relationship Between Early Physician Follow-up and 30-Day Readmission Among Medicare Beneficiaries Hospitalized for Heart Failure. 2010. *JAMA* 303(17): 1716–1722
- <sup>6</sup> Medicare Payment Advisory Commission. A Data Book: Health Care Spending and the Medicare Program. June, 2012. <http://www.medpac.gov/documents/Jun10DataBookEntireReport.pdf>. Accessed May 17, 2012.
- <sup>7</sup> Kaiser Family Foundation. Dual Eligibles: Medicaid's Role for Low-Income Medicare Beneficiaries. May, 2011. <http://www.kff.org/medicaid/upload/4091-08.pdf>. Accessed May 17, 2012.
- <sup>8</sup> Merrell, K., Colby, D.C., and Hogan, C. Medicare Beneficiaries Covered by Medicaid Buy-In Agreements. *Health Affairs.* 1997 16(1):175–184.
- <sup>9</sup> Medicare Payment Advisory Commission. Report to Congress: Medicare and the Health Care Delivery System. June, 2011. [http://www.medpac.gov/chapters/Jun11\\_Ch05.pdf](http://www.medpac.gov/chapters/Jun11_Ch05.pdf). Accessed May 17, 2012.
- <sup>10</sup> National Committee for Quality Assurance. HEDIS® 2012 Volume 2 Technical Specifications for Health Plans. 2011.
- <sup>11</sup> Full dual eligibles qualify for full Medicaid benefits, including long-term care provided in both institutions and in the community as well as prescription drugs. For this group, Medicaid may also pay Medicare premiums and cost sharing. Partial dual eligibles are not eligible for full Medicaid benefits but may receive assistance with some or all of their Medicare premiums and cost sharing.
- <sup>12</sup> Koroukian, SM., Dahman, B., Copeland, G., et al. The Utility of the State Buy-In Variable in the Medicare Denominator File to Identify Dually Eligible Medicare-Medicaid Beneficiaries: A Validation Study. 2010. *Health Serv Res.* 45(1): 265–282.



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