Dual Eligible Population Analysis for SCAN Health Plan: Hospitalizations and Readmissions

March 2012

Avalere Health LLC

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1 Project Overview & Key Findings

1 Avalere Analysis Found that SCAN's Dual Eligibles Outperform CA-MFFS on the PQI Overall Composite and the HEDIS 30-Day Plan All-Cause Readmission Rate

PQI Overall Composite Key Findings

- SCAN's dual eligibles scored better than CA-MFFS dual eligibles on ARHQ's Prevention Quality Indicators (PQI) Overall Composite[1], demonstrating a 14 percent lower hospitalization rate
  - » SCAN's duals were hospitalized less than CA-MFFS across the majority of the PQI measures including, but not limited to, congestive heart failure (CHF), dehydration, bacterial pneumonia, and adult asthma

HEDIS 30-Day Plan All-Cause Readmission Rate Key Findings

- SCAN's dual eligibles had an observed readmission rate that was 28 percent lower, and a risk-adjusted readmission rate 25 percent lower, than a similar cohort of CA-MFFS dual eligibles when comparing HEDIS 30-day Plan All-Cause Readmission (PCR) Rates
- Among SCAN's dual eligibles who are eligible to receive Home and Community-Based Services (HCBS), the HEDIS observed readmission rate is 15.7 percent—almost 25 percent lower than the risk-adjusted expected readmission rate of 20.6 percent

Cost-Savings Analysis Key Findings

- If CA-MFFS dual eligibles had the same readmission and hospitalization rate as SCAN's dual eligibles, there would be 1,320 fewer hospitalizations[2], 1,773 fewer readmissions, for a total of $50 million in annual cost-savings

[1] Dual-eligibles are individuals who are entitled to Medicare Part A and/or Part B and are eligible for some form of Medicaid benefit (Medicare-Medicaid Coordination Office, September 28, 2011)
[2] Agency for Healthcare Research and Quality; The composite measure is comprised of 12 individual measures. See Appendix for list of all individual PQI measures
[3] Healthcare Effectiveness Data and Information Set
[4] The cost analysis was based on the CA-MFFS identified in the matched cohort; there may be additional CA-MFFS duals for whom SCAN may be able to achieve cost-savings, however, those additional beneficiaries were not included in this analysis due to the design of the matched cohort model
[5,6] Cost-analysis for hospitalizations and readmission rates were based on PQI hospitalization rates and HEDIS PCR rates

1 Avalere Compared Quality and Outcomes for SCAN Health Plan's Dual Eligible Members Versus California's Dual Eligible Beneficiaries in Fee-for-Service Medicare

- SCAN Health Plan asked Avalere Health to compare performance on quality measures between SCAN's dual-eligible enrollees[1] and Medicare Fee-for-Service (MFFS) dual eligibles in California, along these two measures:
  1. AHRQ Prevention Quality Indicators (PQI) Overall Composite[2] which measures potentially avoidable hospitalizations and is used to measure access to and quality of ambulatory care in a given geographic area
  2. HEDIS[3] 30-day Plan All-Cause Readmission (PCR) Rate which estimates the number of acute inpatient stays followed by an acute readmission for any discharge within 30 days of hospital discharge
- Avalere made comparisons on 2009 and 2010 data from a matched cohort of SCAN's dual-eligible enrollees and Medicare FFS (MFFS) dual eligible beneficiaries in California
  - » Medicare Standard Analytic Files (SAFs) from 2009 and 2010 were used to compute outcomes for the CA-MFFS dual eligibles; all-provider encounter data for 2009 and 2010 were provided by SCAN to compute outcomes for the SCAN dual eligibles
- SCAN also asked Avalere to estimate the potential cost-savings[4] if CA-MFFS duals had the same hospitalization[5] and readmissions[6] rate as SCAN's dual eligibles

[1] Dual-eligibles are individuals who are entitled to Medicare Part A and/or Part B and are eligible for some form of Medicaid benefit (Medicare-Medicaid Coordination Office, September 28, 2011)
[2] Agency for Healthcare Research and Quality; The composite measure is comprised of 12 individual measures. See Appendix for list of all individual PQI measures
[3] Healthcare Effectiveness Data and Information Set
[4] The cost analysis was based on the CA-MFFS identified in the matched cohort; there may be additional CA-MFFS duals for whom SCAN may be able to achieve cost-savings, however, those additional beneficiaries were not included in this analysis due to the design of the matched cohort model
[5,6] Cost-analysis for hospitalizations and readmission rates were based on PQI hospitalization rates and HEDIS PCR rates

1 Avalere Analysis Found that Medicare Could Have Saved $50 Million in 2010 if CA-MFFS Dual Eligibles Had the Same Hospitalization and Readmission Rates as SCAN's Dual Eligibles

If CA-MFFS duals[1] had the same hospitalization and readmission rates as SCAN's dual eligibles, there could be 1,320 fewer hospitalizations and 1,773 fewer readmissions, for a total of $50 million in annual cost-savings

- Avalere's analysis used a matched cohort model where each SCAN dual-eligible member is matched with a single CA-MFFS dual-eligible beneficiary based on a set of patient-level demographic and clinical characteristics, as well as utilization of acute inpatient and post acute services in the prior year
- Avalere estimated cost-savings using the same matched cohorts used in the hospitalization and readmissions analysis and:
  - » Compared the rates of hospitalization and readmissions between the cohorts to estimate the difference in the number of hospitalizations and readmissions
  - » Multiplied the difference in the number of hospitalizations by the average total cost of hospitalizations for those enrollees who were hospitalized; similarly, multiplied the difference in the number of readmissions by the average total cost of hospitalizations for those enrollees who were readmitted

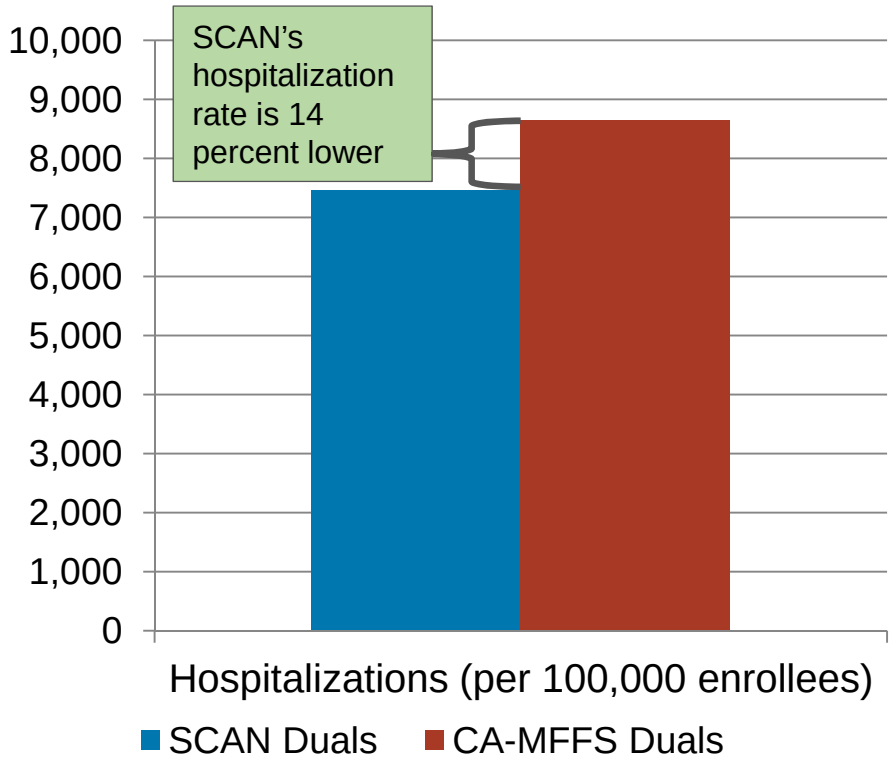
[1] The cost-savings estimate was based on the results of the matched cohort analysis which used a propensity score match model limited to matching one CA-MFFS dual eligible to each SCAN dual eligible, thereby excluding from consideration some CA-MFFS dual eligibles whose risk profiles were similar to those of the SCAN cohort
NOTE: For details regarding the methodology and/or assumptions and limitations, please see the Appendix

1 SCAN's Dual Eligibles Score Better on the PQI Overall Composite Score with a 14 Percent Lower Hospitalization Rate

SCAN Performs Better than CA-MFFS on Select PQI Individual Measures

- SCAN's dual eligibles have lower hospitalization rates than CA-MFFS enrollees on each of the following PQI measures:
  - Congestive Heart Failure (CHF) (PQI 8)
  - Uncontrolled Diabetes (PQI 14)
  - Diabetes Short-Term Complications (PQI 1)
  - Diabetes Long-Term Complications (PQI 3)
  - Lower-Extremity Amputation Among Patients With Diabetes (PQI 16)
  - Dehydration (PQI 10)
  - Bacterial Pneumonia (PQI 11)
  - Urinary Tract Infection (PQI 12)
  - Adult Asthma (PQI 15)
- CA-MFFS dual eligibles have lower hospitalization rates for the following three PQI measures:
  - Angina Without Procedure (PQI 13)
  - Hypertension (PQI 7)
  - Chronic Obstructive Pulmonary Disorder (COPD) (PQI 5)

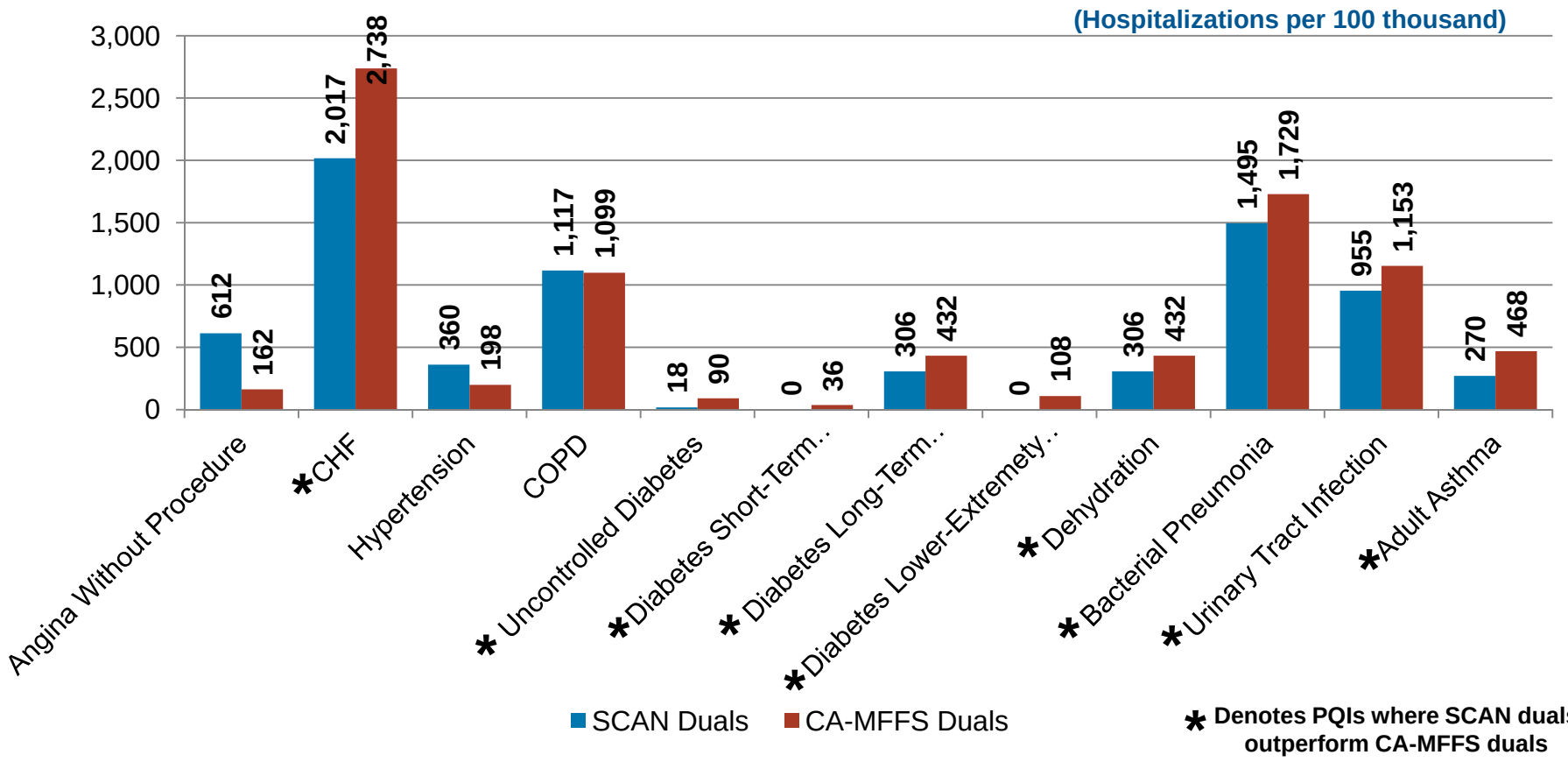
Comparison of SCAN's PQI Overall Composite with CA-MFFS, 2010



NOTE: For details regarding the methodology and limitations for this analysis, please see the Appendix

1 SCAN's Dual Eligibles Score Better on Most of the Twelve PQI Individual Measures[1]

Comparison of PQIs for SCAN and CA-MFFS Dual Eligibles, 2010



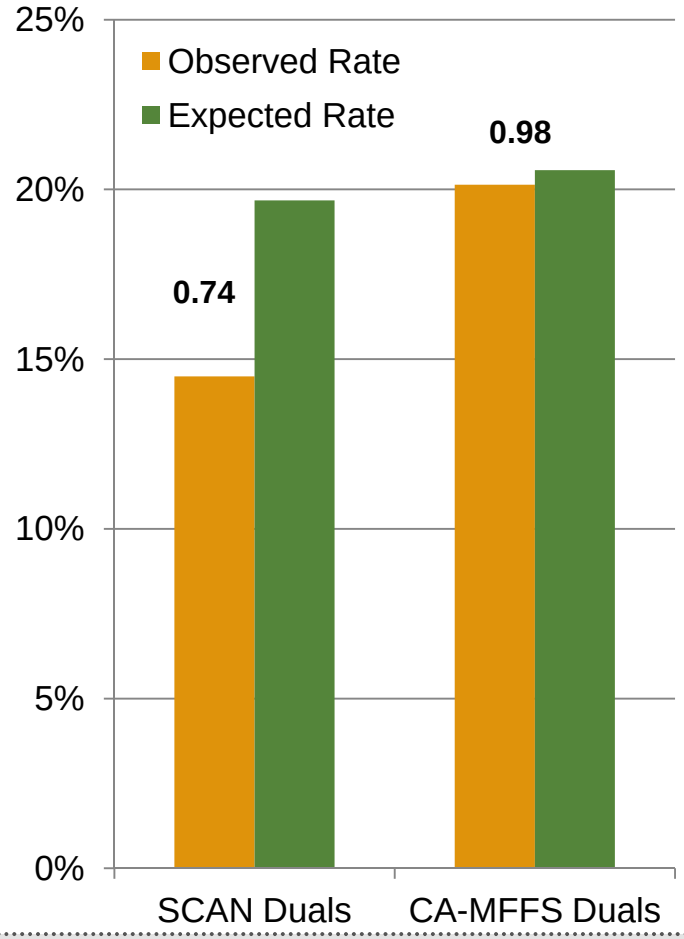
[1] The PQI Overall Composite measure consists of 12 individual measures; SCAN outperforms CA-MFFS on 9 of the 12 measures, with the exception of Angina Without Procedure (PQI 13), Hypertension (PQI 7), and Chronic Obstructive Pulmonary Disease (COPD) (PQI 15)
NOTE: For details regarding the methodology and limitations for this analysis, please see the Appendix

1 SCAN Also Scores Better on the HEDIS PCR Rate With a 25 Percent Lower Risk-Adjusted Readmission Rate

SCAN Performs Better than CA-MFFS for Several Conditions

- SCAN's dual eligibles have a lower observed readmission rate than expected based on SCAN's patient severity compared to CA-MFFS dual eligibles
  - » SCAN's dual eligibles have a 14.5 percent observed readmission rate versus 20.1 percent for CA-MFFS
  - » SCAN's dual eligibles have a 0.74 observed-to-expected readmission rate ratio[1] versus 0.98 for CA-MFFS—demonstrating a 25 percent lower risk-adjusted readmission rate
- Also, among SCAN's dual eligibles who are eligible to receive Home and Community-Based Services (HCBS), the HEDIS observed readmission rate is 15.7 percent—almost 25 percent lower than the risk-adjusted expected readmission rate of 20.6 percent

Comparison of SCAN's HEDIS PCR Rate with CA-MFFS, 2010



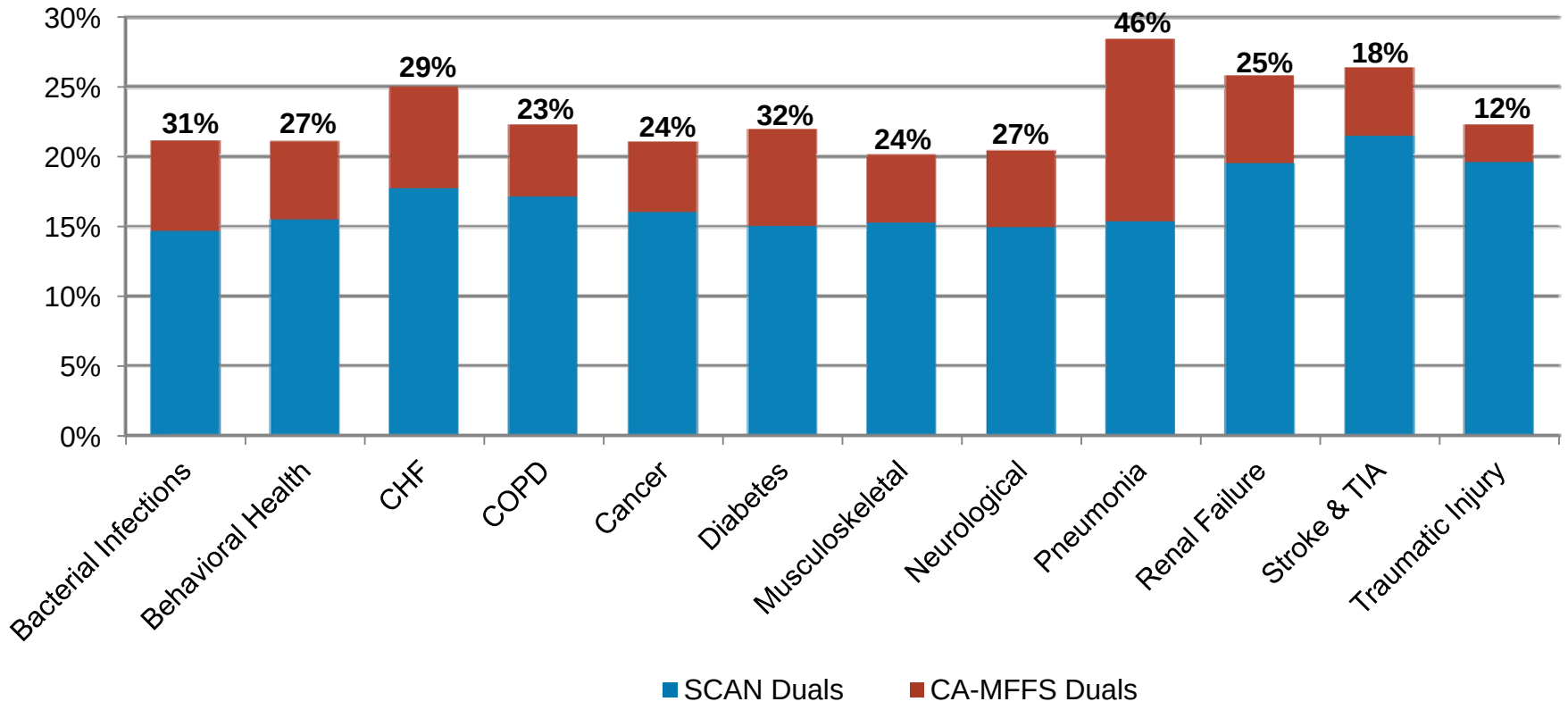
[1] The observed-to-expected readmissions rate ratio compares a plan's observed rate to the plan's expected readmission rate, which accounts for differences in the populations' medical severity and prior utilization of health care services

NOTE: For details regarding the methodology and limitations for this analysis, please see the Appendix

1 SCAN Duals Have Lower HEDIS Observed Readmission Rates than CA-MFFS for Twelve Select Medical Conditions[1]

Comparison of SCAN's Observed Readmission Rates with CA-MFFS, for Twelve Select Conditions, 2010

(Percent difference shown above each bar)

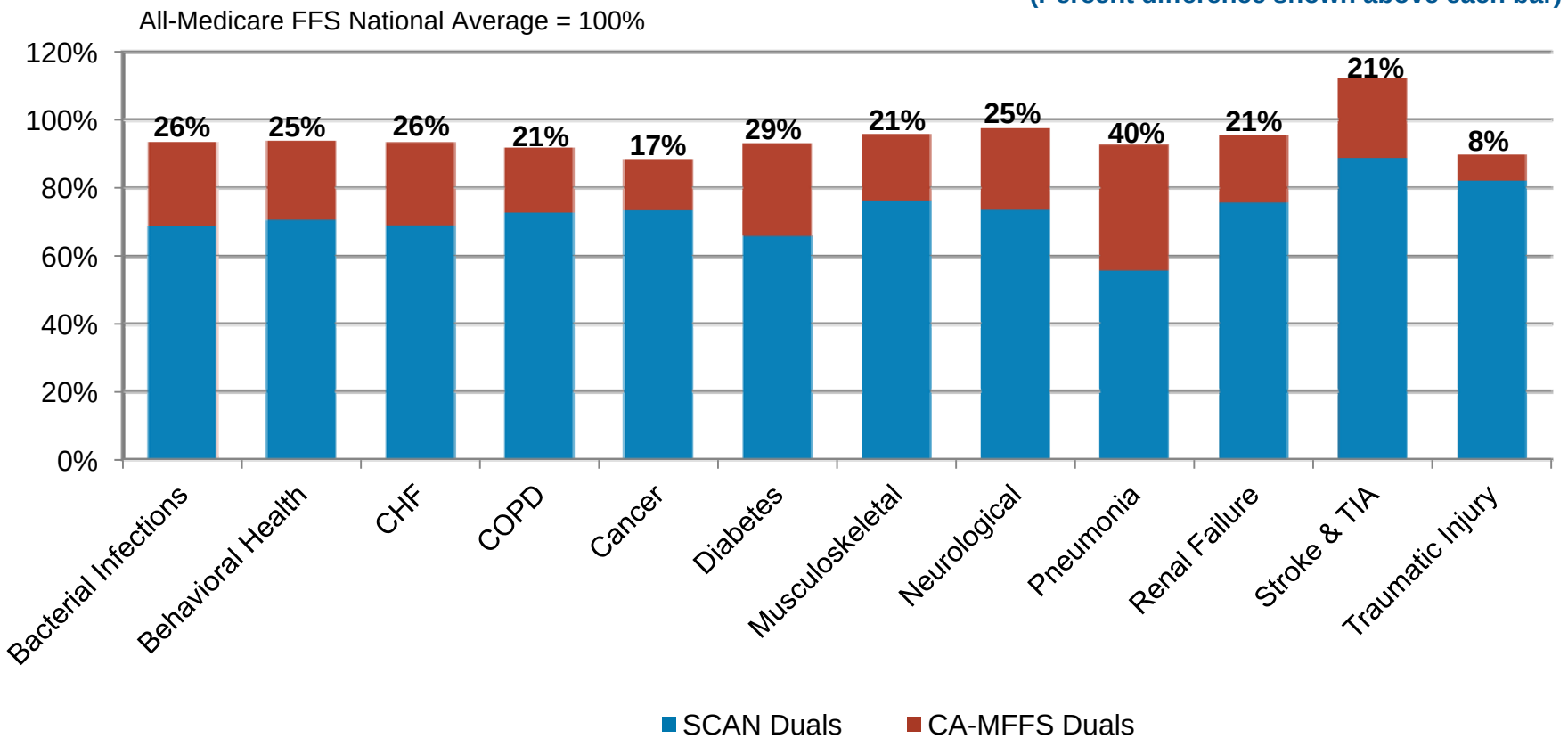


[1] Condition groups were created by mapping enrollees' prior year inpatient and outpatient claims (excluding DME and hospice) into AHRQ H-CUP Clinical Condition Software Level 3 condition groups and then combining and aggregating up to a total of 23 condition groups; the Avalere analysis was limited to these 12 selection conditions since the remaining 11 condition groups are generally "other" conditions such as "other cardiovascular disorders" which are less well defined; See Appendix for full condition group list
NOTE: For details regarding the methodology and limitations, please see the Appendix

1 SCAN Duals Have Lower HEDIS Risk-Adjusted Readmission Rates than CA-MFFS for Twelve Select Medical Conditions[1]

Comparison of Risk-Adjusted Readmission Rates for SCAN and CA-MFFS Dual Eligibles Relative to the All-Medicare National Average, for Twelve Select Conditions, 2010

(Percent difference shown above each bar)



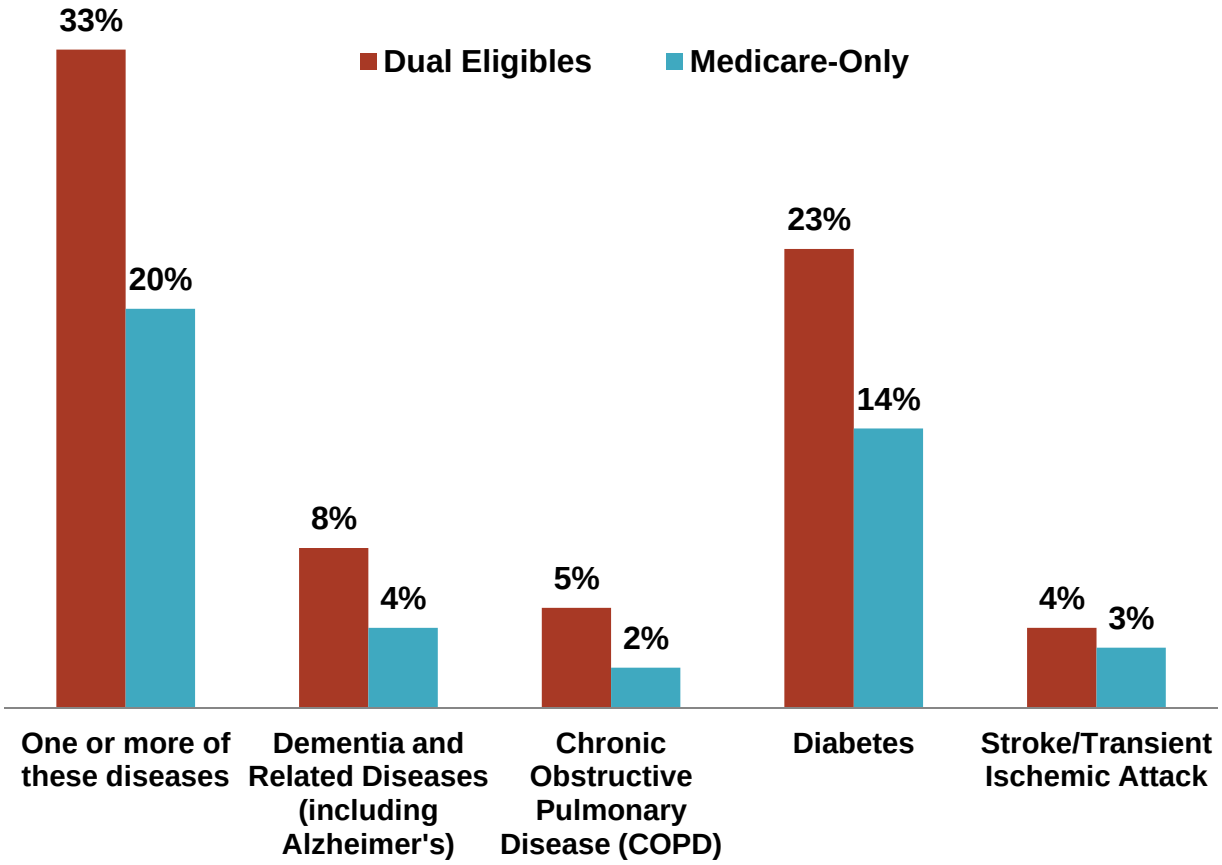
[1] Condition groups were created by mapping enrollees' prior year inpatient and outpatient claims (excluding DME and hospice) into AHRQ H-CUP Clinical Condition Software Level 3 condition groups and then combining and aggregating up to a total of 23 condition groups; the Avalere analysis was limited to these 12 selection conditions since the remaining 11 condition groups are generally "other" conditions such as "other cardiovascular disorders" which are less well defined; See Appendix for full condition group list

NOTE: For details regarding the methodology and limitations, please see the Appendix

2 Background

2 Dual Eligibles Tend to Have Poorer Health Status and Are More Frail Than Medicare-Only Beneficiaries

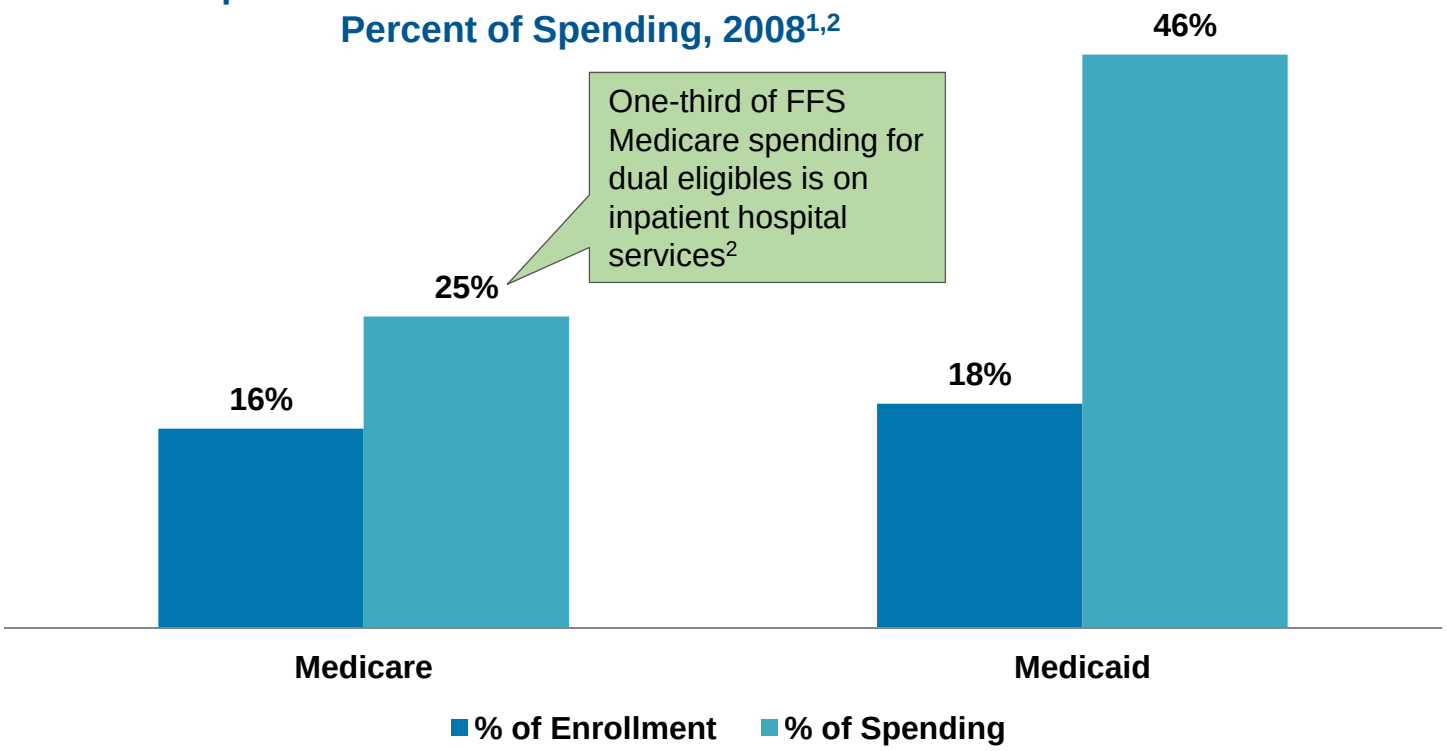
Prevalence of Selected Chronic Conditions in Dual Eligibles and Medicare-Only Beneficiaries, 2008



Source: Avalere Analysis of 2008 Medicare Claims Data

2 Dual Eligibles Have Complex Needs and Account for a Disproportionate Share of Medicare and Medicaid Spending

Comparison of Duals Percent of Enrollment Versus Percent of Spending, 2008[1,2]



The cost of potentially avoidable hospitalizations for dual eligibles was projected to be $7-$8 billion in 2011[3]

[1] MedPAC Report to the Congress: Aligning Incentives in Medicare. Chapter 5: Coordinating the care of dual eligible beneficiaries. June 2010, page 131
[2] Kaiser Family Foundation analysis of the CMS Medicare Current Beneficiary Survey Cost and Use File, 2006
[3] Segal, M. Dual Eligible Beneficiaries and Potentially Avoidable Hospitalizations. CMS Policy Insight Brief. 2011

2 SCAN Health Plan's Care Management Model[1] Assesses and Coordinates Care for Dual Eligible Members

- SCAN operates a Dual Eligible Special Needs Plan (D-SNP) with 6,674[2] enrollees in 2011
  - » SCAN has a long history of serving dual-eligible beneficiaries, including for 20 years as a Social HMO (S/HMO) Demonstration
- SCAN's care management model employs an integrated social and medical approach to the management of dual-eligible members; programs include:
  - » Care management team with case managers to oversee the coordination of services across providers, community-based and institutional care settings, and organizations that offer services to the member
  - » Information tailored to members, support and assistance necessary to more actively manage their own care; and
  - » Provider support to use evidence-based practice guidelines

[1] SCAN Health Plan Internal Resources; SCAN Health Plan. Model of Care: An innovative approach for federal policy makers seeking the best and most cost effective ways to care for vulnerable populations

[2] Kaiser Family Foundation. (2011) Special Needs Plans: Availability and Enrollment

3 Appendix

3 Avalere Utilized Medicare Standard Analytic Files (SAFs) and SCAN's All-Provider Encounter Data

Data sources

- To compute the Medicare outcomes and cost-savings, Avalere used Medicare Standard Analytic Files (SAFs) from 2009 and 2010
  - » CA-MFFS dual eligibles were identified as beneficiaries who were enrolled in MediCal for at least one month in 2010, and were continuously enrolled in MFFS for all of 2009 and 2010, or until death in 2010
  - » Used the 2009 Medicare SAFs as the data source for risk-adjustment purposes
  - » Demographic, clinical condition, psychiatric/substance abuse DRG hospitalization, and acute inpatient and post acute care utilization data from 2009 and 2010 were used to select a matched cohort of CA-MFFS beneficiaries
- To compute the SCAN outcomes, Avalere used all-provider encounter data provided by SCAN for 2009 and 2010
  - » The analysis was conducted on dual eligibles that were enrolled in SCAN's Medi-Medi plan for at least one month in 2010, and were continuously enrolled in SCAN for all of 2009 and 2010, or until death in 2010

[1] For detailed assumptions and limitation of this particular methodology, please see the Technical Memorandum

3 Avalere Conducted a Matched Cohort Analysis to Compare Quality Outcomes For SCAN Dual Eligibles Versus CA-MFFS Dual Eligibles

Data Sources

- Medicare Standard Analytic Files (SAFs) from 2009 and 2010 were used to compute outcomes for the CA-MFFS dual eligibles
- All-provider encounter data for 2009 and 2010 were provided by SCAN to compute outcomes for the SCAN dual eligibles

Matched Cohorts

- Enrollees in both groups were limited to California residents, age 18+, continuously enrolled in either SCAN or Medicare Part A or B for the full 24 months of 2009 and 2010 (or until death in 2010), and were dually eligible for at least one month in 2010
- A sample of SCAN's dual-eligible enrollees (5,552 members) were compared with a similar size sample of CA-MFFS with similar risk profiles
  - » Individuals were matched based on a set of patient-level characteristics including age (18+), gender, clinical condition[1], psychiatric/substance abuse hospitalization in the past year, and the prior year's acute hospital and post-acute care utilization
  - » Each SCAN dual eligible was matched to the CA-MFFS dual eligible who most resembled the SCAN dual eligible on these dimensions

[1] Condition groups were created by mapping enrollees' prior year inpatient and outpatient claims (excluding DME and hospice) into AHRQ H-CUP Clinical Condition Software Level 3 condition groups and then combining and aggregating up to a total of 23 condition groups; the Avalere analysis was limited to these 12 selection conditions since the remaining 11 condition groups are generally "other" conditions such as "other cardiovascular disorders" which are less well defined; See Appendix for full condition group list
NOTE: For details regarding the methodology and limitations, please see the Appendix

3 Avalere Used AHRQ's Methodology to Compute the PQI Overall Composite Measure and Estimated the HEDIS PCR Rate Based on NCQA's Methodology

- The AHRQ PQI Overall Composite measures potentially avoidable hospitalizations for Ambulatory Care Sensitive Conditions (ACSCs), which are intended to reflect issues of access to, and quality of, ambulatory care in a given geographic area
- The HEDIS 30-day PCR Rate estimates the number of acute inpatient stays that were followed by an acute readmission for any diagnosis within 30 days of hospital discharge
  - » This measure is risk-adjusted for patient demographics (age and sex), medical severity identified with CMS' Hierarchical Condition Categories (CMS-HCCs) and survey that occurred during the index acute inpatient stay
- The cost analysis estimates a one-year savings of how much MFFS could save if CA's MFFS dual eligibles had the same PQI hospitalization and HEDIS readmissions rates as SCAN's dual eligibles

NOTE: For more detailed information about the methodology used to construct the matched cohorts, HEDIS 30-Day All-Cause Readmissions Rates, the PQI Overall Composite and individual measures, and the cost-saving analysis, please see the Appendix

3 Cost-Savings[1] Estimates Simulate Hospital and Readmissions Rates for CA-MFFS Dual Eligibles Equal to SCAN's Rates

Potential Cost-Savings Associated with Reduced Hospitalizations

- Compare the PQI Overall Composite hospitalization rate between SCAN dual eligibles and the CA-MFFS dual eligibles matched to them to determine the difference in the number of hospitalizations between the matched cohorts
- Estimate average cost of hospitalizations, using the 2009 and 2010 Medicare SAFs, and multiply by the number of hospitalizations avoided to estimate the total amount that Medicare would save on the CA-MFFS dual eligibles matched to SCAN's dual eligibles

Potential Cost-Savings Associated with Reduced Readmissions

- Compare the HEDIS 30-day PCR rate and the observed-to-expected ratio between SCAN dual eligibles and the CA-MFFS dual eligibles matched to them to determine the difference in the number of readmissions between the matched cohorts
- Estimated the average cost of readmissions, using the 2009 and 2010 Medicare SAFs, and multiply by the number of avoided readmissions to estimate the total amount that Medicare would save on the CA-MFFS dual eligibles matched to SCAN's dual eligibles

[1] For detailed assumptions and limitation of this particular methodology, please see the Appendix

3 Assumptions and Limitations

General Limitation

- All analyses used the Medicare 5 percent SAFs; no state Medicaid data was used for these estimates
  - » The results of the cost-savings analysis were multiplied by 20 to account for potential savings across the entire California dual eligible population who could have been matched to SCAN dual eligibles based on similar risk profiles

Propensity Score Match Model Limitation

- Since the propensity score match analysis was limited to 1:1 matches, the model may have excluded from consideration some CA-MFFS dual eligibles whose risk profiles were similar to those of the SCAN “treatment group”

PQI Overall Composite Limitation

- Analysis assumes some of these hospitalizations could have been avoided, and likewise, does not account for other hospitalizations that may have been avoided

[1] For detailed assumptions and limitation of this particular methodology, please see the Technical Memorandum

3 Assumptions and Limitations (continued)

HEDIS 30-day All-Cause Plan Readmission Rate Limitation

- For the risk-adjustment methodology for the HEDIS PCR rate, Avalere used the "Medicare Advantage and SNP Product Lines" risk-adjustment weights for estimating the expected readmission rate for both samples

Cost-Savings Limitations

- Avalere used the PQI hospitalization rates and HEDIS PCR rates to estimate the potential reduced hospitalizations and readmissions, however, there may be other conditions in addition to the twelve PQI-related conditions
- Estimated costs were based on the total average cost of hospitalizations and readmissions in the CA-MFFS matched sample
  - » Avalere did not model which specific hospitalizations or readmissions and associated costs would be avoided
- Cost savings from avoided readmissions in 2010 do not account for reduced hospitalizations (an avoided hospitalization cannot have an associated readmission)

[1] For detailed assumptions and limitation of this particular methodology, please see the Technical Memorandum

4 Requests for Additional Information

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