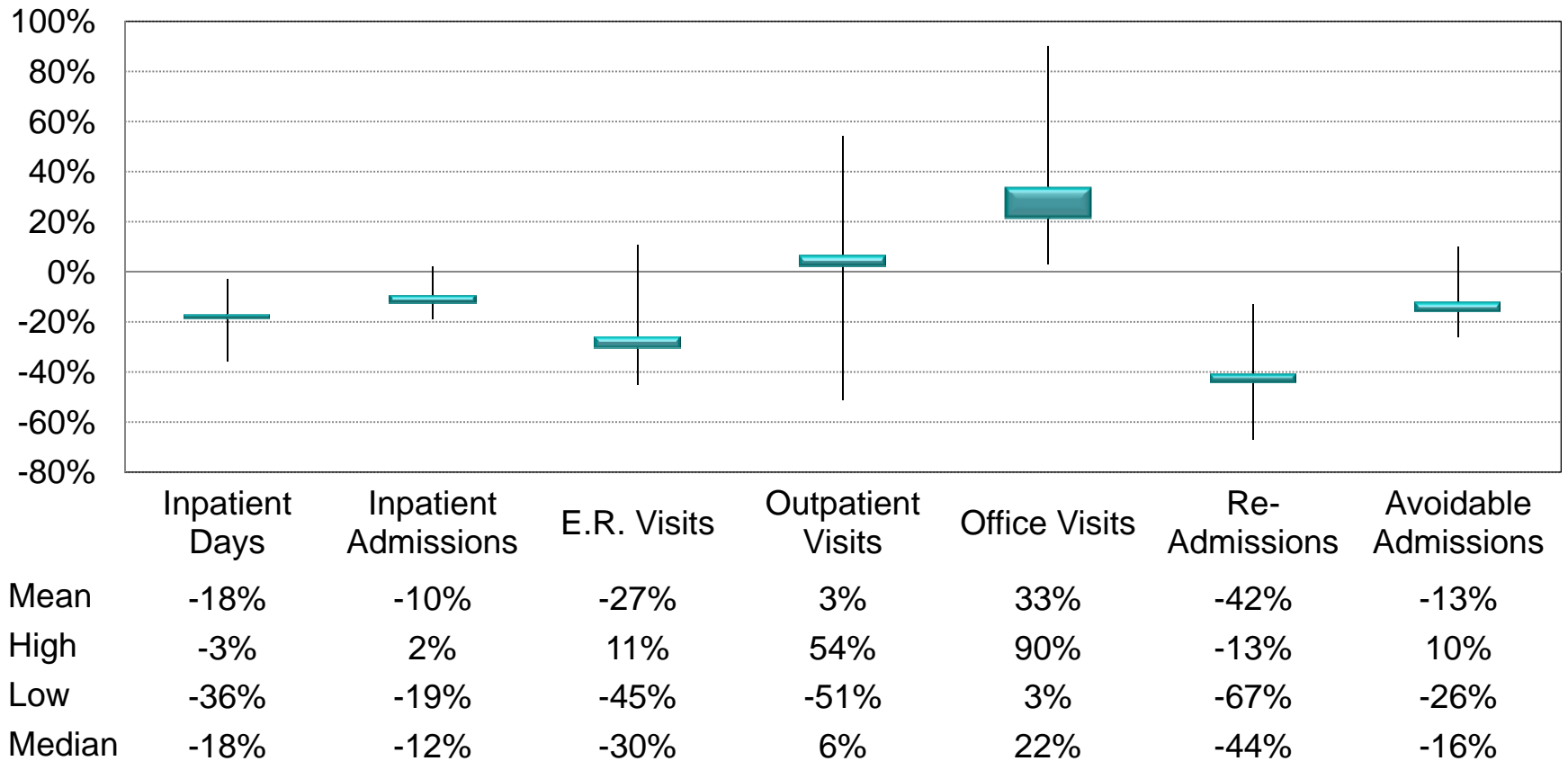


MA vs. FFS Comparisons Based on MA Plan Data and FFS 5% File



Eight-Company Results: Percentage Difference in Utilization Rates, MA Rate vs. FFS Rate (per risk score value)



Source: Authors' calculations, based on the Medicare 5 percent sample files for hospital and physician claims and data from eight regional Medicare Advantage HMO plans in 2005-2006. Revised September 2009.

Preliminary: Company “9” Percentage Difference in Observed Utilization Rates, MA HMO Relative to Local FFS (Per Risk Score Value*)



Data from 2005 and 2006 (pooled)	Inpatient Hospital		Outpatient			Same Quarter Readmissions	13 Potentially Avoidable Admissions
	Days	Admissions	ER Visits	Outpatient Visits	Office Visits		
All Enrollees							
Company 9 Area A	-30%	-3%	-23%	9%	-7%	-46%	-5%
Company 9 Area B	-22%	-6%	-22%	0%	5%	-46%	-2%
Company 9 Area C	-23%	-13%	-38%	-8%	11%	-61%	-18%

Source: Authors' calculations based on the Medicare 5 percent sample files for hospital and physician claims, and data from one large, multi-state Medicare Advantage plan.

Notes: FFS does not include certain Medicaid enrollees (defined as those with 12 months of state assistance in the 5 percent sample claims data).

*Risk scores for FFS and MA enrollees based on age/sex and HCC relative cost values used in Medicare risk adjustment for beneficiaries living in the community, but do not include disease interactive factors, or factors related to disability or institutional status.

California/Nevada: MA vs. FFS Based on AHRQ (HCUP) Admissions



	Inpatient Days	Same Quarter Re-Admissions (Same DRG, Any Hospital)	13 Potentially Avoidable Admissions
MA Rate vs. FFS Rate (per risk score value)			
California – All Hospitals (acute care admissions)			
All Patients	-30%	-15%	-6%
Diabetes Patients	-35%	-21%	-10%
Heart Disease Patients	-30%	-14%	-5%
Nevada – All Hospitals (acute care admissions)			
All Patients	-23%	-33%	-6%
Diabetes Patients	-25%	-32%	-3%
Heart Disease Patients	-21%	-36%	-7%

Selected Regions: California Comparisons of Risk-Adjusted Utilization Rates



Data for 2006	Number of Records (Patients with at Least One Admission)		Percentage Difference in Utilization Rates Per Risk Score Value* (MA versus FFS)		
	MA	FFS	Inpatient Days	Same Quarter Re-Admissions (Same DRG, Any Hospital)	Potentially Avoidable Admissions
California Regions					
Golden Empire	10,994	23,531	-13%	-17%	-13%
West Bay	6,052	12,280	-31%	-6%	-10%
North Bay	12,967	22,646	-27%	-21%	3%
East Bay	14,020	23,486	-20%	-14%	-14%
North San Joaquin	5,904	20,386	-17%	-27%	3%
Santa Clara	10,075	17,823	-24%	-14%	1%
Central	6,183	26,079	-32%	-34%	-33%
Santa Barbara Ventura	3,358	12,957	-21%	-26%	-10%
Los Angeles County	51,085	98,874	-39%	-14%	0%
Inland Counties	23,490	33,390	-29%	-6%	-8%
Orange County	15,107	31,148	-33%	1%	8%
San Diego/Imperial	20,357	28,121	-27%	-22%	1%

Source: California data from the Health Cost and Utilization Project (HCUP) compiled by the Agency for Healthcare Research and Quality (AHRQ). For this table, re-admissions were counted in each region where multiple admissions occurred in different regions in the same quarter. *Risk scores for FFS and MA enrollees based on age/sex and HCC relative cost values used in Medicare risk adjustment for beneficiaries living in the community, but do not include disease interactive factors, or factors related to disability or institutional status

California and Nevada HCUP Sample Basics



Basic Data Characteristics: Records with At Least One Hospital Admission in a Year, Acute Care Admissions

	Medicare Advantage			Fee-for-Service		
	Average Number of Records	Average Age	Average Risk Score*	Average Number of Records	Average Age	Average Risk Score*
Data for 2006						
California – Acute Care Hospitals						
All Enrollees	176,794	77.4	1.83	376,721	77.4	1.87
Diabetes Patients	51,749	76.4	2.54	112,739	76.5	2.55
Heart Disease Patients	94,920	78.2	2.41	199,528	78.3	2.49
Nevada – Acute Care Hospitals						
All Enrollees	14,395	74.5	1.60	33,857	75.6	1.73
Diabetes Patients	3,894	74.0	2.02	9,156	75.0	2.20
Heart Disease Patients	7,422	75.1	2.18	17,860	76.4	2.32

Eight Company/FFS Sample Basics

Sample Characteristics: HMO Enrollees in Eight MA Plans and FFS Enrollees Nationally and in Local Comparison Areas					
Data for 2005 and 2006 (pooled)	Average Age (All Enrollees)	Enrollees with Diabetes (HCCs 15-19)		Enrollees with Heart Diseases (HCCs 79-83, 92, 104, 105)	
		Number of Records	Total HCCs	Number of Records	Total HCCs
National					
FFS Including Medicaid	74.2	639,124	2,344,115	859,916	3,342,530
FFS Medicaid	75.1	<u>105,572</u>	<u>468,752</u>	<u>124,536</u>	<u>588,944</u>
FFS Without Medicaid	74.1	533,552	1,875,363	735,380	2,753,586
Company 1 Area					
MA Plan	74.9	8,031	26,409	8,491	32,322
Local FFS (w/o Medicaid)	73.4	5,916	22,147	8,045	32,300
Company 2 Area					
MA Plan	75.4	17,904	59,404	23,783	83,927
Local FFS (w/o Medicaid)	74.1	5,071	16,911	7,420	26,721
Company 3 Area					
MA Plan	75.1	23,364	76,092	29,499	103,792
Local FFS (w/o Medicaid)	74.7	10,306	40,273	15,544	61,416
Company 4 Area					
MA Plan	75.4	90,195	336,345	126,527	495,751
Local FFS (w/o Medicaid)	75.6	6,099	24,400	9,291	37,401

Eight Company/FFS Sample Basics (Continued)



Sample Characteristics: HMO Enrollees in Eight MA Plans and FFS Enrollees Nationally and in Local Comparison Areas

Data for 2005 and 2006 (pooled)	Average Age (All Enrollees)	Enrollees with Diabetes (HCCs 15-19)		Enrollees with Heart Diseases (HCCs 79-83, 92, 104, 105)	
		Number of Records	Total HCCs	Number of Records	Total HCCs
National					
FFS Including Medicaid	74.2	639,124	2,344,115	859,916	3,342,530
FFS Medicaid	75.1	<u>105,572</u>	<u>468,752</u>	<u>124,536</u>	<u>588,944</u>
FFS Without Medicaid	74.1	533,552	1,875,363	735,380	2,753,586
Company 5 Area					
MA Plan	75.8	8,912	26,592	12,694	42,837
Local FFS (w/o Medicaid)	73.9	2,576	8,258	3,644	12,755
Company 6 Area					
MA Plan	75.9	13,196	46,428	17,016	65,499
Local FFS (w/o Medicaid)	74.7	6,523	25,623	9,701	38,865
Company 7 Area					
MA Plan	74.7	13,891	45,952	16,639	62,619
Local FFS (w/o Medicaid)	75.0	2,915	10,955	3,921	15,389
Company 8 Area					
MA Plan	74.4	24,951	77,249	30,649	104,265
Local FFS (w/o Medicaid)	75.2	1,353	4,812	1,738	6,818

Eight Company/FFS Severe Diagnosis Rates and Risk Scores



Average Rates of Illness Diagnoses (HCC Groups) and Overall Risk Scores – Medicare FFS and Eight Medicare Advantage HMO Plans

Average HCC Markers per Beneficiary Record, 2005 and 2006 (pooled)	All HCCs	Cancers (HCCs 7-10)	Diabetes (HCCs 15-19)	Heart Disease (HCCs 79-83,92,104-105)	Kidney and Renal Disease (HCCs 130-132)	Average Overall Computed Risk Score *
National						
FFS Including Medicaid	1.74	0.16	0.34	0.58	0.06	1.13
FFS Medicaid	2.78	0.14	0.59	0.87	0.11	1.61
FFS Without Medicaid	1.62	0.16	0.31	0.54	0.05	1.08
Company 1 Area						
MA Plan	1.47	0.10	0.36	0.46	0.06	1.03
Local FFS (w/o Medicaid)	1.64	0.14	0.31	0.54	0.06	1.09
Company 2 Area						
MA Plan	1.36	0.13	0.28	0.40	0.05	0.99
Local FFS (w/o Medicaid)	1.41	0.16	0.25	0.46	0.05	1.00
Company 3 Area						
MA Plan	1.61	0.15	0.37	0.54	0.06	1.11
Local FFS (w/o Medicaid)	1.77	0.19	0.32	0.59	0.06	1.16

Eight-Company/FFS Severe Diagnosis Rates and Risk Scores (continued)



Average Rates of Illness Diagnoses (HCC Groups) and Overall Risk Scores – Medicare FFS and Eight Medicare Advantage HMO Plans						
Average HCC Markers per Beneficiary Record, 2005 and 2006 (pooled)	All HCCs	Cancers (HCCs 7-10)	Diabetes (HCCs 15-19)	Heart Disease (HCCs 79-83,92,104-105)	Kidney and Renal Disease (HCCs 130-132)	Average Overall Computed Risk Score *
Company 4 Area						
MA Plan	2.08	0.19	0.39	0.72	0.08	1.29
Local FFS (w/o Medicaid)	1.97	0.17	0.36	0.70	0.07	1.25
Company 5 Area						
MA Plan	1.35	0.14	0.23	0.44	0.06	1.00
Local FFS (w/o Medicaid)	1.30	0.14	0.23	0.41	0.05	0.96
Company 6 Area						
MA Plan	1.62	0.20	0.33	0.50	0.07	1.12
Local FFS (w/o Medicaid)	1.76	0.19	0.32	0.58	0.06	1.16
Company 7 Area						
MA Plan	1.74	0.19	0.36	0.55	0.07	1.13
Local FFS (w/o Medicaid)	1.79	0.17	0.36	0.59	0.06	1.16
Company 8 Area						
MA Plan	1.62	0.18	0.36	0.56	0.06	1.08
Local FFS (w/o Medicaid)	1.82	0.17	0.35	0.59	0.06	1.18

Preliminary: Company “9” -- Average Rates of Illness Diagnoses and Risk Scores*



Average HCC Markers per Beneficiary Record, 2005 and 2006 (pooled)	All HCCs	Cancers (HCCs 7-10)	Diabetes (HCCs 15-19)	Heart Diseases (HCCs 79-83,92,104,105)	Kidney and Renal Disease (HCCs 130-132)	Average Overall Computed Risk Score*
National						
FFS Including Medicaid	1.74	0.16	0.34	0.58	0.06	1.13
FFS Medicaid	2.78	0.14	0.59	0.87	0.11	1.61
FFS Without Medicaid	1.62	0.16	0.31	0.54	0.05	1.08
Company 9 Area A						
MA Plan	1.57	0.14	0.28	0.56	0.06	1.06
Local FFS (w/o Medicaid)	1.69	0.17	0.34	0.59	0.05	1.11
Company 9 Area B						
MA Plan	1.58	0.16	0.26	0.57	0.06	1.08
Local FFS (w/o Medicaid)	1.65	0.18	0.32	0.54	0.05	1.10
Company 9 Area C						
MA Plan	1.63	0.16	0.27	0.58	0.06	1.08
Local FFS (w/o Medicaid)	1.63	0.16	0.31	0.57	0.06	1.10

Source: Authors' calculations based on the Medicare 5 percent sample files for hospital and physician claims, and data from one large, multi-state Medicare Advantage plan.

Notes: FFS = enrollees with Medicare's traditional fee-for-service coverage; FFS does not include certain Medicaid enrollees (defined as those with 12 months of state assistance in the 5 percent sample claims data).

*Risk scores for FFS and MA enrollees based on age/sex and HCC relative cost values used in Medicare risk adjustment for beneficiaries living in the community, but do not include disease interactive factors, or factors related to disability or institutional status.

Example of ICD-9-CM Crosswalk with HCC 79



ICD-9-CM Code	ICD9_Description	CMS-HCC Model Category	Category Name
4274	Ventricular Fibrillation /Flutter	79	Cardio Respiratory Failure And Shock
42741	Ventricular Fibrillation	79	Cardio Respiratory Failure And Shock
42742	Ventricular Flutter	79	Cardio Respiratory Failure And Shock
4275	Cardiac Arrest	79	Cardio Respiratory Failure And Shock
5184	Acute Lung Edema Nos	79	Cardio Respiratory Failure And Shock
5185	Post Traumatic Pulmonary Insufficiency	79	Cardio Respiratory Failure And Shock
51881	Acute Respiratory Failure	79	Cardio Respiratory Failure And Shock
51882	Other Pulmonary Insufficiency	79	Cardio Respiratory Failure And Shock
51883	Chronic Respiratory Failure	79	Cardio Respiratory Failure And Shock
51884	Acute & Chronic Respiratory Fail	79	Cardio Respiratory Failure And Shock
7855	Shock Without Trauma	79	Cardio Respiratory Failure And Shock
78550	Shock Nos	79	Cardio Respiratory Failure And Shock
78551	Cardiogenic Shock	79	Cardio Respiratory Failure And Shock
798	Sudden Death Cause Unknown	79	Cardio Respiratory Failure And Shock
7980	Sudden Infant Death Syndrome	79	Cardio Respiratory Failure And Shock
7981	Instantaneous Death	79	Cardio Respiratory Failure And Shock
7982	Death Within 24 Hr Symptom	79	Cardio Respiratory Failure And Shock
7989	Unattended Death	79	Cardio Respiratory Failure And Shock
7990	Asphyxia	79	Cardio Respiratory Failure And Shock
79901	Asphyxia	79	Cardio Respiratory Failure And Shock
79902	Hypoxemia	79	Cardio Respiratory Failure And Shock

Source: The ICD-9-CM to HCC crosswalk are from Humana, Inc., "CMS-HCC Medicare Risk Adjustment Model" and can be found at http://www.humana.com/providers/MedPlans/MRA_PFFS.asp?plan=H3.

Age/Sex Risk Factor Values

Sex, Age	Risk Factor Value
Female, Age 65-69	0.307
Female, Age 70-74	0.384
Female, Age 75-79	0.483
Female, Age 80-84	0.572
Female, Age 85-89	0.665
Male, Age 65-69	0.346
Male, Age 70-74	0.453
Male, Age 75-79	0.577
Male, Age 80-84	0.657
Male, Age 85-89	0.79

Source: Age/Sex risk factor values are from the 2005 MA Ratebook compiled by the Centers for Medicare and Medicaid Services (CMS).

Disease Group Factors (15 of 70 HCCs)

HCC	Description	Risk Factor Value
HCC1	HIV/AIDS	0.685
HCC2	Septicemia/Shock	0.89
HCC5	Opportunistic Infections	0.652
HCC7	Metastatic Cancer and Acute Leukemia	1.464
HCC8	Lung, Upper Digestive Tract, and Other Severe Cancers	1.464
HCC9	Lymphatic, Head and Neck, Brain, and Other Major Cancers	0.69
HCC10	Breast, Prostate, Colorectal and Other Cancers and Tumors	0.233
HCC15	Diabetes with Renal or Peripheral Circulatory Manifestation	0.764
HCC16	Diabetes with Neurologic or Other Specified Manifestation	0.552
HCC17	Diabetes with Acute Complications	0.391
HCC18	Diabetes with Ophthalmologic or Unspecified Manifestation	0.343
HCC19	Diabetes without Complication	0.2
HCC21	Protein-Calorie Malnutrition	0.922
HCC25	End-Stage Liver Disease	0.9
HCC26	Cirrhosis of Liver	0.516

Criteria for Identifying Potentially Avoidable Admission for Bacterial Pneumonia



INCLUSIONS	EXCLUSIONS
ICD-9-CM Principal Diagnosis Codes for Bacterial Pneumonia	Exclude These Cases
481 (Pneumococcal Pneumonia)	Transferring From Another Institution (SID ASOURCE=2)
4822 (H.Influenzae Pneumonia)	MDC 14 (Pregnancy, Childbirth, And Puerperium)
48230 (Strep Pneumonia Unspecified)	MDC 15 (Newborn And Other Neonates)
48231 (Grp A Strep Pneumonia)	With Diagnosis Code For Sickle Cell Anemia Or HB-S Disease (see below)
48232 (Grp B Strep Pneumonia)	
48239 (Oth Strep Pneumonia)	Exclude These ICD-9-CM Diagnosis Codes
4829 (Bacterial Pneumonia Nos)	28241 (Thalassemia HB-S W/O Crisis)
4830 (Mycoplasma Pneumonia)	28242 (Thalassemia HB-S W Crisis)
4831 (Chlamydia Pneumonia Oct96-)	28260 (Sickle Cell Disease Nos)
4838 (Oth Spec Org Pneumonia)	28261 (HB-S Disease W/O Crisis)
485 (Bronchopneumonia Org Nos)	28262 (HB-S Disease W Crisis)
486 (Pneumonia, Organism Nos)	28263 (HB-S /HB-C Disease W/O Crisis)
	28264(HB-S /HB-C Disease W Crisis)
	28268 (HB-S Disease W/O Crisis Nec)
	28269 (HB-Ss Disease Nec W Crisis)

Source: AHRQ Quality Indicators, Prevention Quality Indicators: Technical Specifications; Department of Health and Human Services, Agency for Healthcare Research and Quality, <http://www.qualityindicators.ahrq.gov>. October 2001. Version 3.1 (March 12, 2007).