

Risk Model Comparison

Payment Year 2008 vs. 2009

<i>Risk Adjustment Factors</i>	<i>Description</i>	<i>Community Factor 2008 Payment Year</i>	<i>Community Factor 2009 Payment Year</i>	<i>Community Factor 2008 vs. 2009 Payment Years</i>	<i>Community Factor 2008 vs. 2009 Payment (Percent Difference)</i>	<i>Institutional Factors 2008 Payment Year</i>	<i>Institutional Factors 2009 Payment Year</i>	<i>Institutional Factor 2008 vs. 2009 Payment Years</i>	<i>Institutional Factor 2008 vs. 2009 Payment (Percent Difference)</i>
F0_34	Female, 0-34	0.223	0.187	-0.036	-16.14%	1.24	1.026	-0.214	-17.26%
F35_44	Female, 35-44	0.224	0.206	-0.018	-8.04%	0.879	0.884	0.005	0.57%
F45_54	Female, 45-54	0.304	0.275	-0.029	-9.54%	0.879	0.888	0.009	1.02%
F55_59	Female, 55-59	0.37	0.333	-0.037	-10.00%	0.879	0.943	0.064	7.28%
F60_64	Female, 60-64	0.422	0.411	-0.011	-2.61%	0.879	0.943	0.064	7.28%
F65_69	Female, 65-69	0.298	0.299	0.001	0.34%	0.945	0.971	0.026	2.75%
F70_74	Female, 70-74	0.371	0.368	-0.003	-0.81%	0.885	0.931	0.046	5.20%
F75_79	Female, 75-79	0.468	0.457	-0.011	-2.35%	0.822	0.835	0.013	1.58%
F80_84	Female, 80-84	0.546	0.544	-0.002	-0.37%	0.757	0.775	0.018	2.38%
F85_89	Female, 85-89	0.637	0.637	0	0.00%	0.694	0.704	0.01	1.44%
F90_94	Female, 90-94	0.788	0.761	-0.027	-3.43%	0.617	0.614	-0.003	-0.49%
F95P	Female, 95+	0.783	0.771	-0.012	-1.53%	0.482	0.457	-0.025	-5.19%
M0_34	Male,0-34	0.107	0.12	0.013	12.15%	1.059	1.03	-0.029	-2.74%
M35_44	Male,35-44	0.167	0.164	-0.003	-1.80%	0.822	0.871	0.049	5.96%
M45_54	Male, 45-54	0.197	0.217	0.02	10.15%	0.842	0.871	0.029	3.44%
M55_59	Male, 55-59	0.297	0.249	-0.048	-16.16%	0.916	0.978	0.062	6.77%
M60_64	Male, 60-64	0.401	0.389	-0.012	-2.99%	0.97	1.015	0.045	4.64%
M65_69	Male, 65-69	0.33	0.328	-0.002	-0.61%	1.14	1.221	0.081	7.11%
M70_74	Male, 70-74	0.416	0.413	-0.003	-0.72%	1.093	1.154	0.061	5.58%
M75_79	Male, 75-79	0.52	0.517	-0.003	-0.58%	1.093	1.143	0.05	4.57%
M80_84	Male, 80-84	0.617	0.597	-0.02	-3.24%	1.056	1.087	0.031	2.94%
M85_89	Male, 85-89	0.744	0.692	-0.052	-6.99%	1.033	1.001	-0.032	-3.10%
M90_94	Male, 90-94	0.83	0.834	0.004	0.48%	0.895	0.932	0.037	4.13%
M95P	Male, 95+	0.96	0.98	0.02	2.08%	0.775	0.743	-0.032	-4.13%
F_MAD	Medicaid Female, Disabled	0.137	0.179	0.042	30.66%	0.077	0.091	0.014	18.18%
F_MAA	Medicaid Female, Aged	0.177	0.131	-0.046	-25.99%	0.077	0.091	0.014	18.18%
M_MAD	Medicaid Male, Disabled	0.09	0.166	0.076	84.44%	0.077	0.091	0.014	18.18%
M_MAA	Medicaid Male, Aged	0.202	0.077	-0.125	-61.88%	0.077	0.091	0.014	18.18%
F_ORD	Originally-Disabled Female	0.232	0.204	-0.028	-12.07%	0.019	0.023	0.004	21.05%
M_ORD	Originally-Disabled Male	0.181	0.168	-0.013	-7.18%	0.019	0.023	0.004	21.05%

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HCC1	HIV/AIDS	0.933	0.945	0.012	1.29%	0.735	0.967	0.232	31.56%
HCC2	Septicemia/Shock	0.877	0.759	-0.118	-13.45%	0.762	0.764	0.002	0.26%
HCC5	Opportunistic Infections	0.41	0.3	-0.11	-26.83%	0.476	0.288	-0.188	-39.50%
HCC7	Metastatic Cancer and Acute Leukemia	1.648	2.276	0.628	38.11%	0.568	0.824	0.256	45.07%
HCC8	Lung, Upper Digestive Tract, and Other Severe Cancers	1.648	1.053	-0.595	-36.10%	0.568	0.47	-0.098	-17.25%
HCC9	Lymphatic, Head and Neck, Brain, and Other Major Cancers	0.771	0.794	0.023	2.98%	0.402	0.368	-0.034	-8.46%
HCC10	Breast, Prostate, Colorectal and Other Cancers and Tumors	0.258	0.208	-0.05	-19.38%	0.241	0.182	-0.059	-24.48%
HCC15	Diabetes with Renal or Peripheral Circulatory Manifestation 1	0.608	0.508	-0.1	-16.45%	0.466	0.459	-0.007	-1.50%
HCC16	Diabetes with Neurologic or Other Specified Manifestation 1	0.452	0.408	-0.044	-9.73%	0.466	0.459	-0.007	-1.50%
HCC17	Diabetes with Acute Complications 1	0.364	0.339	-0.025	-6.87%	0.466	0.459	-0.007	-1.50%
HCC18	Diabetes with Ophthalmologic or Unspecified Manifestation 1	0.265	0.259	-0.006	-2.26%	0.466	0.459	-0.007	-1.50%
HCC19	Diabetes without Complication 1	0.181	0.162	-0.019	-10.50%	0.257	0.248	-0.009	-3.50%
HCC21	Protein-Calorie Malnutrition	0.82	0.856	0.036	4.39%	0.395	0.374	-0.021	-5.32%
HCC25	End-Stage Liver Disease	0.996	0.978	-0.018	-1.81%	0.768	0.654	-0.114	-14.84%
HCC26	Cirrhosis of Liver	0.519	0.406	-0.113	-21.77%	0.363	0.384	0.021	5.79%
HCC27	Chronic Hepatitis	0.303	0.406	0.103	33.99%	0.363	0.384	0.021	5.79%
HCC31	Intestinal Obstruction/Perforation	0.347	0.311	-0.036	-10.37%	0.349	0.345	-0.004	-1.15%
HCC32	Pancreatic Disease	0.383	0.403	0.02	5.22%	0.277	0.309	0.032	11.55%
HCC33	Inflammatory Bowel Disease	0.27	0.241	-0.029	-10.74%	0.263	0.205	-0.058	-22.05%
HCC37	Bone/Joint/Muscle Infections/Necrosis	0.55	0.535	-0.015	-2.73%	0.482	0.497	0.015	3.11%
HCC38	Rheumatoid Arthritis and Inflammatory Connective Disease Tissue	0.363	0.346	-0.017	-4.68%	0.233	0.215	-0.018	-7.73%
HCC44	Severe Hematological Disorders	1.136	1.015	-0.121	-10.65%	0.477	0.493	0.016	3.35%
HCC45	Disorders of Immunity	0.841	0.912	0.071	8.44%	0.443	0.427	-0.016	-3.61%
HCC51	Drug/Alcohol Psychosis 3	0.25	0.274	0.024	9.60%	0	0	0	NA
HCC52	Drug/Alcohol Dependence 3	0.25	0.274	0.024	9.60%	0	0	0	NA
HCC54	Schizophrenia	0.515	0.524	0.009	1.75%	0.347	0.351	0.004	1.15%
HCC55	Major Depressive, Bipolar, and Paranoid Disorders	0.37	0.353	-0.017	-4.59%	0.308	0.293	-0.015	-4.87%
HCC67	Quadriplegia/Other Extensive Paralysis	0.961	1.011	0.05	5.20%	0.337	0.434	0.097	28.78%
HCC68	Paraplegia	0.961	0.993	0.032	3.33%	0.291	0.434	0.143	49.14%
HCC69	Spinal Cord Disorders/Injuries	0.511	0.558	0.047	9.20%	0.152	0.225	0.073	48.03%
HCC70	Muscular Dystrophy 3	0.466	0.395	-0.071	-15.24%	0	0	0	NA
HCC71	Polyneuropathy	0.324	0.327	0.003	0.93%	0.253	0.225	-0.028	-11.07%
HCC72	Multiple Sclerosis	0.472	0.599	0.127	26.91%	0.174	0.145	-0.029	-16.67%

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HCC73	Parkinson's and Huntington's Diseases 3	0.547	0.592	0.045	8.23%	0.089	0.092	0.003	3.37%
HCC74	Seizure Disorders and Convulsions	0.28	0.267	-0.013	-4.64%	0.165	0.177	0.012	7.27%
HCC75	Coma, Brain Compression/Anoxic Damage	0.446	0.415	-0.031	-6.95%	0	0	0	NA
HCC77	Respirator Dependence/Tracheostomy Status	1.86	1.867	0.007	0.38%	1.36	1.559	0.199	14.63%
HCC78	Respiratory Arrest	1.448	1.082	-0.366	-25.28%	0.984	1.235	0.251	25.51%
HCC79	Cardio-Respiratory Failure and Shock	0.629	0.578	-0.051	-8.11%	0.464	0.445	-0.019	-4.09%
HCC80	Congestive Heart Failure	0.395	0.41	0.015	3.80%	0.231	0.228	-0.003	-1.30%
HCC81	Acute Myocardial Infarction	0.349	0.359	0.01	2.87%	0.474	0.424	-0.05	-10.55%
HCC82	Unstable Angina and Other Acute Ischemic Heart Disease	0.332	0.284	-0.048	-14.46%	0.474	0.424	-0.05	-10.55%
HCC83	Angina Pectoris/Old Myocardial Infarction	0.231	0.244	0.013	5.63%	0.296	0.29	-0.006	-2.03%
HCC92	Specified Heart Arrhythmias	0.295	0.293	-0.002	-0.68%	0.198	0.207	0.009	4.55%
HCC95	Cerebral Hemorrhage	0.366	0.324	-0.042	-11.48%	0.175	0.179	0.004	2.29%
HCC96	Ischemic or Unspecified Stroke	0.303	0.265	-0.038	-12.54%	0.175	0.179	0.004	2.29%
HCC100	Hemiplegia/Hemiparesis	0.41	0.437	0.027	6.59%	0.065	0.039	-0.026	-40.00%
HCC101	Cerebral Palsy and Other Paralytic Syndromes 3	0.212	0.18	-0.032	-15.09%	0	0	0	NA
HCC104	Vascular Disease with Complications	0.645	0.61	-0.035	-5.43%	0.495	0.482	-0.013	-2.63%
HCC105	Vascular Disease	0.324	0.316	-0.008	-2.47%	0.164	0.165	0.001	0.61%
HCC107	Cystic Fibrosis	0.398	0.399	0.001	0.25%	0.327	0.631	0.304	92.97%
HCC108	Chronic Obstructive Pulmonary Disease	0.398	0.399	0.001	0.25%	0.327	0.359	0.032	9.79%
HCC111	Aspiration and Specified Bacterial Pneumonias	0.761	0.703	-0.058	-7.62%	0.644	0.573	-0.071	-11.02%
HCC112	Pneumococcal Pneumonia, Empyema, Lung Abscess	0.233	0.249	0.016	6.87%	0.188	0.181	-0.007	-3.72%
HCC119	Proliferative Diabetic Retinopathy and Vitreous Hemorrhage	0.278	0.252	-0.026	-9.35%	0.527	0.497	-0.03	-5.69%
HCC130	Dialysis Status	1.432	1.349	-0.083	-5.80%	2.211	1.718	-0.493	-22.30%
HCC131	Renal Failure	0.389	0.368	-0.021	-5.40%	0.411	0.388	-0.023	-5.60%
HCC132	Nephritis	0.182	0.125	-0.057	-31.32%	0.29	0.253	-0.037	-12.76%
HCC148	Decubitus Ulcer of Skin	1.167	1.153	-0.014	-1.20%	0.474	0.485	0.011	2.32%
HCC149	Chronic Ulcer of Skin, Except Decubitus	0.463	0.449	-0.014	-3.02%	0.239	0.241	0.002	0.84%
HCC150	Extensive Third-Degree Burns 3	0.818	1.416	0.598	73.11%	0	0	0	NA
HCC154	Severe Head Injury 3	0.446	0.415	-0.031	-6.95%	0	0	0	NA
HCC155	Major Head Injury 3	0.182	0.106	-0.076	-41.76%	0	0	0	NA
HCC157	Vertebral Fractures without Spinal Cord Injury	0.501	0.443	-0.058	-11.58%	0.109	0.161	0.052	47.71%
HCC158	Hip Fracture/Dislocation 3	0.45	0.429	-0.021	-4.67%	0	0	0	NA
HCC161	Traumatic Amputation	0.736	0.678	-0.058	-7.88%	0.224	0.26	0.036	16.07%
HCC164	Major Complications of Medical Care and Trauma	0.299	0.296	-0.003	-1.00%	0.219	0.309	0.09	41.10%

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HCC174	Major Organ Transplant Status	1.073	0.705	-0.368	-34.30%	0.449	0.92	0.471	104.90%
HCC176	Artificial Openings for Feeding or Elimination	0.758	0.662	-0.096	-12.66%	0.843	0.841	-0.002	-0.24%
HCC177	Amputation Status, Lower Limb/Amputation Complications	0.653	0.678	0.025	3.83%	0.224	0.26	0.036	16.07%
D_HCC5	Disabled*Opportunistic Infections	0.941	0.623	-0.318	-33.79%	0.28	1.016	0.736	262.86%
D_HCC44	Disabled*Severe Hematological Disorders	0.551	1.036	0.485	88.02%	0.419	0.362	-0.057	-13.60%
D_HCC51	Disabled*Drug/Alcohol Psychosis	0.801	0.729	-0.072	-8.99%	0.425	0.299	-0.126	-29.65%
D_HCC52	Disabled*Drug/Alcohol Dependence	0.356	0.31	-0.046	-12.92%	0.425	0.299	-0.126	-29.65%
D_HCC107	Disabled*Cystic Fibrosis 3	1.391	1.097	-0.294	-21.14%	0	0	0	NA
INT1	Disease Interaction, DM*CHF 2	0.204	0.154	-0.05	-24.51%	0.088	0.125	0.037	42.05%
INT2	Disease Interaction, DM*CVD	0.149	0.102	-0.047	-31.54%	0.026	0.028	0.002	7.69%
INT3	Disease Interaction, CHF*COPD	0.216	0.219	0.003	1.39%	0.194	0.194	0	0.00%
INT4	Disease Interaction, COPD*CVD*CAD	0.174	0.173	-0.001	-0.57%	0.042	0.071	0.029	69.05%
INT5	Disease Interaction, RF*CHF 2,3	0.248	0.231	-0.017	-6.85%	0	0	0	NA
INT6	RF*CHF*DM 2	0.664	0.477	-0.187	-28.16%	0.203	0.358	0.155	76.35%

NOTES:

1 Includes Type I or Type II Diabetes Mellitus.

2 Beneficiaries with the three-way interaction RF*CHF*DM are excluded from the two-way interactions DM*CHF and RF*CHF. Thus, the three-way interaction term RF*CHF*DM is not additive to the two-way interaction terms DM*CHF and RF*CHF. Rather, it is hierarchical to, and excludes these interaction terms. A beneficiary with all three conditions is not "credited" with the two-way interactions. All other interaction terms are additive.

3 HCC or disease interaction excluded from institutional model because estimated coefficient less than 0 or t-statistic less than 1.0.

The 2007 denominator of \$7,463.14 used to calculate both the community and institutional factors is the national predicted average annual cost under the model.

DM is diabetes mellitus (HCCs 15-19).

CHF is congestive heart failure (HCC 80).

COPD is chronic obstructive pulmonary disease (HCC 108).

CVD is cerebrovascular disease (HCCs 95, 96, 100, and 101).

CAD is coronary artery disease (HCCs 81-83).

RF is renal failure (HCC 131).