



Report to Congress: Unified Payment for Medicare-Covered Post-Acute Care

Analysis and development of the prototype Unified PAC prospective payment system called for in the IMPACT Act

Appendix I

Prototype Results—Payment to Cost Ratios

July 2022

Table I-1. Payment to Cost Ratios by Provider Characteristics - 2017 to 2020

Provider Characteristic	2017			2018			2019			2020		
	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio
Overall	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Provider Type												
<i>IRF</i>	1.780	1.743	1.021	1.789	1.751	1.021	1.887	1.850	1.020	2.072	2.039	1.016
<i>SNF</i>	1.348	1.359	0.992	1.349	1.361	0.991	1.379	1.390	0.992	1.344	1.352	0.994
<i>HHA</i>	0.295	0.295	1.002	0.292	0.291	1.003	0.299	0.299	1.002	0.284	0.285	0.998
<i>LTCH</i>	4.203	4.110	1.023	4.365	4.277	1.021	4.636	4.568	1.015	5.021	4.973	1.010
Bed Size												
<i>< 25</i>	1.564	1.657	0.944	1.580	1.645	0.961	1.633	1.765	0.925	1.799	1.982	0.908
<i>25 - 99</i>	1.637	1.609	1.017	1.641	1.616	1.015	1.677	1.647	1.018	1.722	1.694	1.016
<i>100 - 199</i>	1.397	1.390	1.005	1.396	1.389	1.005	1.431	1.420	1.008	1.407	1.394	1.010
<i>200 +</i>	1.583	1.662	0.952	1.597	1.675	0.953	1.659	1.761	0.942	1.704	1.796	0.948
Ownership												
<i>IRF</i>												
<i>For-Profit</i>	1.746	1.612	1.083	1.751	1.606	1.090	1.852	1.698	1.091	2.046	1.896	1.079
<i>Non-Profit</i>	1.826	1.919	0.952	1.845	1.953	0.944	1.937	2.073	0.934	2.111	2.250	0.938
<i>Government</i>	1.829	1.959	0.934	1.841	1.983	0.928	1.947	2.118	0.920	2.110	2.245	0.940
<i>SNF</i>												
<i>For-Profit</i>	1.351	1.357	0.996	1.352	1.365	0.990	1.383	1.401	0.987	1.343	1.347	0.997
<i>Non-Profit</i>	1.336	1.339	0.997	1.337	1.323	1.011	1.363	1.334	1.022	1.346	1.346	0.999
<i>Government</i>	1.362	1.521	0.895	1.370	1.510	0.907	1.417	1.572	0.901	1.356	1.494	0.907
<i>HHA</i>												
<i>For-Profit</i>	0.299	0.301	0.994	0.295	0.297	0.993	0.302	0.305	0.991	0.285	0.282	1.011
<i>Non-Profit</i>	0.288	0.282	1.020	0.286	0.279	1.026	0.294	0.286	1.031	0.281	0.286	0.983
<i>Government</i>	0.296	0.316	0.937	0.294	0.317	0.929	0.307	0.339	0.905	0.293	0.333	0.880
<i>LTCH</i>												
<i>For-Profit</i>	4.153	3.965	1.047	4.330	4.134	1.047	4.602	4.438	1.037	5.017	4.874	1.029
<i>Non-Profit</i>	4.420	4.748	0.931	4.498	4.870	0.924	4.767	5.086	0.937	5.036	5.411	0.931
<i>Government</i>	4.328	4.442	0.974	4.495	4.690	0.958	4.766	4.983	0.957	5.024	5.108	0.984
Urbanicity												
<i>Rural</i>	1.097	1.094	1.003	1.086	1.084	1.002	1.088	1.085	1.003	1.040	1.027	1.012
<i>Urban</i>	0.985	0.985	0.999	0.987	0.987	1.000	0.987	0.987	1.000	0.994	0.996	0.998
Census Division												
<i>Northeast</i>	0.943	0.910	1.036	0.941	0.905	1.040	0.941	0.908	1.036	0.944	0.928	1.017
<i>Midwest</i>	1.028	1.015	1.013	1.033	1.015	1.018	1.031	1.017	1.014	1.030	1.017	1.013
<i>South</i>	1.039	1.073	0.969	1.033	1.065	0.970	1.033	1.058	0.977	1.042	1.057	0.986
<i>Pacific</i>	0.941	0.920	1.023	0.951	0.943	1.008	0.953	0.953	1.000	0.928	0.928	1.000

Table I-1. Payment to Cost Ratios by Provider Characteristics - 2017 to 2020 (continued)

Provider Characteristic	2017-2019		
	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio
Overall	1.000	1.000	1.000
Provider Type			
<i>IRF</i>	1.816	1.779	1.021
<i>SNF</i>	1.358	1.370	0.992
<i>HHA</i>	0.295	0.295	1.002
<i>LTCH</i>	4.382	4.297	1.020
Bed Size			
<i>< 25</i>	1.591	1.684	0.945
<i>25 - 99</i>	1.650	1.622	1.017
<i>100 - 199</i>	1.408	1.400	1.006
<i>200 +</i>	1.613	1.700	0.949
Ownership			
<i>IRF</i>			
<i>For-Profit</i>	1.782	1.632	1.092
<i>Non-Profit</i>	1.866	1.982	0.941
<i>Government</i>	1.871	2.030	0.922
<i>SNF</i>			
<i>For-Profit</i>	1.362	1.376	0.989
<i>Non-Profit</i>	1.344	1.324	1.015
<i>Government</i>	1.388	1.556	0.892
<i>HHA</i>			
<i>For-Profit</i>	0.299	0.301	0.992
<i>Non-Profit</i>	0.289	0.282	1.026
<i>Government</i>	0.300	0.329	0.912
<i>LTCH</i>			
<i>For-Profit</i>	4.344	4.154	1.046
<i>Non-Profit</i>	4.542	4.929	0.922
<i>Government</i>	4.493	4.593	0.978
Urbanicity			
<i>Rural</i>	1.088	1.085	1.002
<i>Urban</i>	0.986	0.987	1.000
Census Division			
<i>Northeast</i>	0.942	0.908	1.037
<i>Midwest</i>	1.031	1.015	1.015
<i>South</i>	1.035	1.065	0.971
<i>Pacific</i>	0.948	0.937	1.011

Table I-2. Payment to Cost Ratios by Unified PAC Clinical Group (UPCG) - 2017 to 2020

Unified PAC Clinical Group (UPCG)	2017			2018			2019		
	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio
MMTA: Cardiac	0.296	0.302	0.982	0.298	0.303	0.983	0.306	0.311	0.986
MMTA: Endocrine	0.305	0.310	0.984	0.302	0.307	0.984	0.312	0.316	0.986
MMTA: Gastrointestinal/Genitourinary	0.264	0.267	0.985	0.266	0.270	0.987	0.274	0.278	0.987
MMTA: Infections	0.267	0.269	0.993	0.266	0.267	0.996	0.276	0.277	0.997
MMTA: Respiratory	0.289	0.294	0.983	0.290	0.295	0.983	0.299	0.303	0.987
MMTA: Surgical Aftercare	0.238	0.242	0.985	0.237	0.240	0.986	0.247	0.251	0.987
MMTA: Other	0.270	0.275	0.983	0.271	0.277	0.981	0.276	0.280	0.986
Lower Extremity Fracture (Including with Joint Replacement)	1.230	1.240	0.992	1.220	1.231	0.991	1.238	1.249	0.991
Major Joint Replacement Without Lower Extremity Fracture	0.541	0.555	0.974	0.548	0.561	0.977	0.568	0.581	0.978
Orthopedic Surgery (Not Joint Replacement)	1.395	1.411	0.989	1.363	1.381	0.987	1.356	1.371	0.989
Trauma	0.878	0.893	0.983	0.889	0.906	0.981	0.877	0.889	0.987
Limb Loss	1.664	1.641	1.014	1.640	1.622	1.011	1.670	1.651	1.011
Orthopedic (Other)	0.818	0.838	0.977	0.792	0.810	0.977	0.783	0.800	0.978
Stroke	1.432	1.439	0.995	1.434	1.443	0.994	1.471	1.478	0.995
Non-Traumatic Brain Dysfunction	1.491	1.483	1.006	1.531	1.520	1.007	1.580	1.569	1.007
Spinal Dysfunction	2.335	2.289	1.020	2.181	2.174	1.003	2.509	2.474	1.014
Traumatic Brain Injury	1.278	1.283	0.997	1.261	1.266	0.996	1.297	1.298	0.999
Neurological (Other)	1.072	1.081	0.991	1.099	1.108	0.992	1.163	1.169	0.994
Respiratory	1.408	1.376	1.023	1.406	1.375	1.023	1.452	1.424	1.020
Cardiovascular	1.257	1.238	1.015	1.260	1.241	1.015	1.280	1.264	1.013
Behavioral Health	0.269	0.275	0.981	0.266	0.270	0.983	0.276	0.281	0.983
Coma	2.634	2.683	0.982	2.523	2.586	0.976	2.664	2.735	0.974
Invasive Ventilator	4.840	4.632	1.045	4.915	4.707	1.044	5.154	4.939	1.044
Gastrointestinal & Hepatobiliary	1.271	1.250	1.016	1.263	1.241	1.018	1.284	1.264	1.016
Infections	1.514	1.485	1.019	1.515	1.487	1.019	1.482	1.455	1.018
Kidney & Urinary	1.367	1.344	1.017	1.349	1.326	1.017	1.344	1.326	1.013
Skin	0.869	0.883	0.983	0.853	0.866	0.985	0.817	0.829	0.986
Cancer	1.033	1.010	1.023	1.041	1.018	1.023	1.096	1.072	1.022
Transplant	1.604	1.572	1.020	1.781	1.749	1.018	1.901	1.892	1.005
Hematological	1.307	1.272	1.027	1.288	1.249	1.031	1.278	1.251	1.021
Other	1.193	1.192	1.001	1.196	1.194	1.002	1.260	1.258	1.002
COVID-19	-	-	-	-	-	-	-	-	-

Table I-2. Payment to Cost Ratios by Unified PAC Clinical Group (UPCG) - 2017 to 2020 (continued)

Unified PAC Clinical Group (UPCG)	2020			2017-2019		
	Average	Average	Payment	Average	Average	Payment
	Payment	Relative	Weight to	Payment	Relative	Weight to
	Weight	Cost	Cost Ratio	Weight	Cost	Cost Ratio
MMTA: Cardiac	0.283	0.287	0.986	0.300	0.305	0.984
MMTA: Endocrine	0.287	0.291	0.987	0.306	0.311	0.985
MMTA: Gastrointestinal/Genitourinary	0.260	0.263	0.991	0.268	0.271	0.986
MMTA: Infections	0.263	0.263	0.997	0.269	0.271	0.995
MMTA: Respiratory	0.278	0.281	0.989	0.293	0.297	0.984
MMTA: Surgical Aftercare	0.247	0.250	0.990	0.241	0.244	0.986
MMTA: Other	0.258	0.261	0.988	0.272	0.276	0.983
Lower Extremity Fracture (Including with Joint Replacement)	1.233	1.243	0.992	1.228	1.239	0.991
Major Joint Replacement Without Lower Extremity Fracture	0.667	0.679	0.981	0.552	0.565	0.976
Orthopedic Surgery (Not Joint Replacement)	1.343	1.357	0.989	1.372	1.388	0.988
Trauma	0.835	0.846	0.987	0.880	0.895	0.983
Limb Loss	1.721	1.697	1.014	1.657	1.637	1.012
Orthopedic (Other)	0.784	0.799	0.981	0.798	0.817	0.977
Stroke	1.438	1.443	0.997	1.444	1.452	0.995
Non-Traumatic Brain Dysfunction	1.672	1.664	1.005	1.532	1.522	1.007
Spinal Dysfunction	2.724	2.703	1.008	2.336	2.308	1.012
Traumatic Brain Injury	1.288	1.294	0.995	1.276	1.280	0.997
Neurological (Other)	1.234	1.235	0.998	1.109	1.117	0.993
Respiratory	1.475	1.451	1.016	1.421	1.391	1.022
Cardiovascular	1.275	1.263	1.010	1.265	1.247	1.015
Behavioral Health	0.249	0.252	0.989	0.270	0.275	0.982
Coma	2.947	3.033	0.972	2.616	2.672	0.979
Invasive Ventilator	5.625	5.415	1.039	4.963	4.751	1.045
Gastrointestinal & Hepatobiliary	1.366	1.345	1.016	1.274	1.253	1.017
Infections	1.479	1.456	1.016	1.502	1.474	1.019
Kidney & Urinary	1.347	1.336	1.008	1.353	1.332	1.016
Skin	0.706	0.716	0.987	0.847	0.861	0.985
Cancer	1.175	1.151	1.021	1.055	1.032	1.022
Transplant	1.820	1.788	1.018	1.758	1.735	1.013
Hematological	1.286	1.267	1.015	1.287	1.254	1.026
Other	1.402	1.395	1.005	1.215	1.213	1.002
COVID-19	1.006	1.006	1.000	-	-	-

Table I-3. Payment to Cost Ratios by Deciles of Payment Weight - 2017 to 2020

Deciles of Payment Weight	2017			2018			2019		
	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio
1st Decile	0.165	0.169	0.975	0.163	0.164	0.989	0.176	0.178	0.991
2nd Decile	0.278	0.273	1.018	0.271	0.268	1.013	0.280	0.279	1.005
3rd Decile	0.323	0.324	0.998	0.319	0.318	1.004	0.320	0.320	0.999
4th Decile	0.381	0.358	1.062	0.378	0.357	1.059	0.371	0.358	1.037
5th Decile	0.902	0.894	1.009	0.898	0.887	1.012	0.759	0.733	1.036
6th Decile	1.256	1.266	0.992	1.250	1.266	0.988	1.246	1.254	0.993
7th Decile	1.386	1.406	0.985	1.380	1.395	0.990	1.386	1.403	0.988
8th Decile	1.497	1.507	0.993	1.505	1.515	0.994	1.527	1.546	0.988
9th Decile	1.647	1.662	0.991	1.650	1.667	0.990	1.691	1.705	0.991
10th Decile	2.511	2.490	1.009	2.524	2.507	1.007	2.556	2.538	1.007

Table I-3. Payment to Cost Ratios by Deciles of Payment Weight - 2017 to 2020 (continued)

Deciles of Payment Weight	2020			2017-2019		
	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio	Average Payment Weight	Average Relative Cost	Payment Weight to Cost Ratio
1st Decile	0.158	0.161	0.976	0.171	0.173	0.988
2nd Decile	0.266	0.264	1.007	0.278	0.274	1.013
3rd Decile	0.305	0.307	0.994	0.320	0.322	0.996
4th Decile	0.353	0.344	1.028	0.376	0.360	1.045
5th Decile	0.750	0.714	1.050	0.845	0.828	1.021
6th Decile	1.224	1.241	0.986	1.250	1.257	0.994
7th Decile	1.363	1.381	0.987	1.386	1.409	0.984
8th Decile	1.493	1.521	0.982	1.511	1.523	0.993
9th Decile	1.704	1.701	1.002	1.663	1.677	0.991
10th Decile	2.671	2.655	1.006	2.528	2.507	1.008

Notes:

- 1) IRF = Inpatient Rehabilitation Facility, SNF = Skilled Nursing Facility, LTCH = Long-Term Care Hospital, HHA = Home Health Agency, PAC = Post-Acute Care, MMTA = Medication Management, Teaching, and Assessment.
- 2) Unit of payment (i.e., unit of analysis for calibration of payment weights) is the PAC "stay." A stay may span more than one PAC claim.
- 3) Payment weights calibrated using all PAC Claims from a 50% random sample of PAC users within each year. Independent samples drawn from each year.
- 4) HHA claims aggregated to "stays" defined as sequences of HHA episodes representing a continuous course of care. Stays beginning with a recertification (indicating the sequence has additional claims in the prior year) were dropped.
- 5) LTCH stays include both stays paid under the LTCH PPS and under the site-neutral LTCH payment policy.
- 6) "Short stays" defined as length of stay of 3 calendar days or fewer for IRF, SNF, and LTCH, and 4 visits or fewer for HHA.
- 7) "Decedents" defined as the beneficiary being deceased upon discharge from the PAC stay.
- 8) Cost outliers (PAC stay total cost >3 SD from the mean within UPG, P-CMG, and PAC Provider Type), decedents, and short stays were excluded from these statistics.
- 9) Total cost of the PAC stay is adjusted to account for geographic variation in wages using the CMS wage-index and labor share for each geographic area and PAC setting in each year.
- 10) Final payment weight is calculated by multiplying the PAC stay's base payment weight by its corresponding Comorbidity, PAC Setting, and Rural Adjustment factors. Special populations (i.e., short stays, decedents) are always assigned to Comorbidity Group 1. See Appendix J for Base Payment Weights and Adjustment Factors.
- 11) Payment to Cost Ratio defined as the ratio of the average payment weight generated by the prototype Unified PAC PPS to the average relative (rescaled to 1) total cost of the PAC stay across key groups of PAC providers and beneficiaries.

Source: RTI International Analysis of Medicare Claims and Administrative Data – 2017 to 2020

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