



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 J

Prototype Results—Model Fit Statistics

July 2022

Table J-1. Model Fit Statistics (R2) by Provider Characteristics - 2017 to 2020

Provider Characteristic	2017	2018	2019	2020	2017-2019
Overall	0.474	0.472	0.485	0.481	0.476
Provider Type					
<i>IRF</i>	0.265	0.255	0.244	0.233	0.253
<i>SNF</i>	0.134	0.132	0.130	0.111	0.131
<i>HHA</i>	0.126	0.133	0.125	0.120	0.127
<i>LTCH</i>	0.216	0.206	0.202	0.208	0.206
Bed Size					
< 25	0.408	0.383	0.378	0.407	0.379
25 - 99	0.368	0.363	0.366	0.376	0.365
100 - 199	0.208	0.213	0.212	0.212	0.208
200 +	0.253	0.255	0.259	0.279	0.254
Ownership					
<i>For-Profit</i>					
<i>IRF</i>	0.46	0.457	0.470	0.464	0.46
<i>SNF</i>	0.27	0.259	0.246	0.236	0.26
<i>HHA</i>	0.14	0.132	0.130	0.110	0.13
<i>LTCH</i>	0.12	0.124	0.115	0.110	0.12
<i>Non-Profit</i>					
<i>IRF</i>	0.23	0.215	0.207	0.213	0.22
<i>SNF</i>	0.52	0.516	0.531	0.531	0.52
<i>HHA</i>	0.25	0.245	0.240	0.229	0.24
<i>LTCH</i>	0.14	0.138	0.135	0.120	0.14
<i>Government</i>					
<i>IRF</i>	0.14	0.149	0.144	0.142	0.14
<i>SNF</i>	0.20	0.211	0.216	0.223	0.19
<i>HHA</i>	0.43	0.436	0.440	0.455	0.42
<i>LTCH</i>	0.28	0.264	0.260	0.264	0.26
<i>Urbanicity</i>					
<i>Rural</i>	0.13	0.128	0.124	0.121	0.12
<i>Urban</i>	0.15	0.165	0.160	0.152	0.15
<i>Census Division</i>					
<i>Northeast</i>	0.22	0.231	0.229	0.315	0.20
<i>Midwest</i>	0.379	0.379	0.398	0.385	0.383
<i>South</i>	0.488	0.486	0.497	0.494	0.489
<i>Pacific</i>					
<i>Northeast</i>	0.446	0.445	0.456	0.452	0.447
<i>Midwest</i>	0.470	0.473	0.488	0.495	0.475
<i>South</i>	0.484	0.484	0.499	0.493	0.488
<i>Pacific</i>	0.491	0.478	0.486	0.477	0.484

Table J-2. Model Fit Statistics (R2) by Unified PAC Clinical Group (UPCG) - 2017 to 2020

Unified Clinical Group	2017	2018	2019	2020	2017-2019
MMTA: Cardiac	0.101	0.108	0.100	0.096	0.102
MMTA: Endocrine	0.105	0.102	0.096	0.086	0.101
MMTA: Gastrointestinal/Genitourinary	0.127	0.133	0.124	0.123	0.128
MMTA: Infections	0.130	0.139	0.128	0.125	0.131
MMTA: Respiratory	0.111	0.113	0.108	0.114	0.110
MMTA: Surgical Aftercare	0.147	0.146	0.135	0.126	0.142
MMTA: Other	0.100	0.108	0.100	0.110	0.103
Lower Extremity Fracture (Including with Joint Replacement)	0.355	0.354	0.371	0.386	0.359
Major Joint Replacement Without Lower Extremity Fracture	0.491	0.499	0.510	0.519	0.499
Orthopedic Surgery (Not Joint Replacement)	0.333	0.333	0.345	0.352	0.335
Trauma	0.451	0.450	0.464	0.477	0.453
Limb Loss	0.319	0.301	0.326	0.352	0.314
Orthopedic (Other)	0.481	0.492	0.505	0.506	0.492
Stroke	0.399	0.399	0.403	0.398	0.399
Non-Traumatic Brain Dysfunction	0.380	0.382	0.403	0.425	0.387
Spinal Dysfunction	0.404	0.366	0.445	0.432	0.397
Traumatic Brain Injury	0.434	0.429	0.432	0.430	0.430
Neurological (Other)	0.387	0.383	0.389	0.343	0.386
Respiratory	0.243	0.252	0.255	0.257	0.249
Cardiovascular	0.234	0.238	0.231	0.234	0.234
Behavioral Health	0.124	0.113	0.092	0.121	0.109
Coma	0.420	0.440	0.464	0.370	0.435
Invasive Ventilator	0.261	0.260	0.259	0.265	0.259
Gastrointestinal & Hepatobiliary	0.262	0.253	0.249	0.272	0.255
Infections	0.260	0.252	0.239	0.234	0.250
Kidney & Urinary	0.156	0.157	0.158	0.154	0.156
Skin	0.495	0.461	0.454	0.502	0.472
Cancer	0.248	0.249	0.236	0.229	0.243
Transplant	0.481	0.440	0.432	0.500	0.440
Hematological	0.117	0.125	0.116	0.198	0.116
Other	0.310	0.309	0.340	0.341	0.317
COVID-19	-	-	-	0.231	-

Note: "-" indicates no cases.

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 UCPG, 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) Model fit (R²) estimated using ordinary least squares regression specified similar to the prototype. Models are specified separately for each of the key groups of providers and beneficiaries shown and control for UCPG, P-CMG, Comorbidity Group, PAC setting type, rural indicator. UCPG is interacted with each of the other independent variables except in UCPG-specific models.

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

RTI Program Reference: UPAC_BS0040